FINAL REPORT

Air Pollution

INFORMATION NEEDS AND THE KNOWLEDGE, ATTITUDES AND BEHAVIOUR OF CANADIANS

Prepared for:
Health Canada
HC-POR-16

Prepared by:
Environics Research Group

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1.0 INTRODUCTION

The importance of air quality in Canada was heightened over the summer as many parts of Canada experienced a prolonged heat wave, accompanied by multiple smog and air quality advisories. There are numerous aspects involved in the relationship between air pollution and the health of Canadians. As a result, Health Canada wanted to explore Canadians' attitudes, values, perceptions and practices in this area. Environics conducted a research program that will provide Health Canada with baseline information that can be used to guide its outreach and health promotion activities to engage Canadians in clean air issues.

To obtain this information, Environics conducted a national survey of 1,213 Canadians, 16 years of age or older and a series of six focus group sessions (two each) in Toronto, Montreal and Vancouver. The focus groups were conducted between October 23-25, 2001. Interviewing for the national survey was conducted between November 16-25, 2001. Overall, the results of the national survey are accurate to within ±2.8 percentage points, 19 times out of 20. The margins of error are somewhat larger for the various subgroups. While the focus group results are not necessarily representative of the general public, they do provide valuable insights regarding typical public reaction to these issues.

This research program investigated the following topic areas:

- Top-of-mind perceptions/concerns regarding air pollution/air quality
- Level of concern regarding air pollution
- Willingness for personal action
- Roles and responsibilities of various actors (e.g., government, industry, individuals)
- Determinants of health
- Perceived effects of air pollution on health
- Personal health conditions – including possible respiratory problems
- Provision and receipt of advice regarding the relationship between air pollution and health
- Information requirements and preferred vehicles/ channels of information
- Familiarity and use of the air quality index
- Perceived sources of air pollution

All research work was conducted in accordance with the professional standards established by the Professional Market Research Society (PMRS) and the Canadian Association of Market Research Organizations (CAMRO).

This report presents the results of the survey. Values in the tables are percentages unless otherwise indicated. Copies of the English and French research instruments are appended to this report and detailed statistical tables are presented under separate cover.

2.0 EXECUTIVE SUMMARY

Environics Research Group is pleased to present this summary of qualitative and quantitative research findings to Health Canada. These findings are based on a national survey of 1,213 Canadians, 16 years of age or older, and a series of focus groups in Toronto, Montreal and Vancouver. The focus group sessions were conducted between October 23-25, 2001, while the national survey was conducted between November 16, 2001 and November 25, 2001. Overall, the national survey results are accurate within ±2.8 percentage points, 19 times out of 20. While the focus group results are not necessarily representative of the general public, they do provide valuable insights regarding typical public reaction to these issues.

DETERMINANTS OF HEALTH

- When asked, top-of-mind, to identify factors that have an impact on a person's health, lifestyle choices (63%) and the environment (31%) are mentioned most often.

- While the environment is the second most frequently cited factor that is seen to have an impact on a person's health, Canadians are less likely to suggest that the environment has the biggest impact when compared with three other possible factors (lifestyle choices, hereditary or genetic factors and societal factors). In this comparison, Canadians still feel that lifestyle choices have the biggest impact (48%), followed by societal impacts (15%), hereditary or genetic factors (13%) and the environment (12%).

CONCERN ABOUT AIR QUALITY/AIR POLLUTION

- Air pollution, poor air quality, pollution in general and water quality are seen as the most important environmental problems facing Canadians today.

- When presented with a list of five environmental issues, Canadians are more concerned about the manufacture, use and disposal of toxic chemicals, water quality and air quality. They are less concerned about the depletion of the ozone layer and the use of biotechnology in agriculture and food production.

AIR POLLUTION AND HEALTH

- A majority of Canadians believe that air pollution affects the health of Canadians a great deal. Respiratory and lung problems, asthma and cancer are the human health effects thought to be associated with air pollution.

- Overall, one-quarter of Canadians currently suffer or have suffered from health problems that they feel were due to air pollution. Two in ten report they have been diagnosed with a respiratory illness. Asthma and bronchitis are the most commonly mentioned respiratory problems.

- In general, Canadians think that indoor and outdoor air pollution have the same effects on their health.

- Only one in ten Canadians have received advice from a doctor regarding the effect of air pollution on their health. The most frequently mentioned forms of such advice include instructions to stop smoking or avoid second-hand smoke and to stay indoors or to curtail their activities. For those who have received advice regarding the effects of air pollution on their health, an overwhelming majority say that they followed this advice.

PERCEPTIONS OF AIR POLLUTION

- Canadians tend to be slightly negative with respect to the air pollution situation in their community. While one-half believe that air pollution in their community has remained the same over the last five years, one-third suggest that the situation has worsened. Only one in ten suggest that it has improved.

- Canadians are more concerned about global problems with the atmosphere resulting from air pollution than they are about air pollution in their community.

ROLES AND RESPONSIBILITIES

- Canadians think the federal government and large companies need to play the lead role in addressing air pollution problems.

- Canadians put more faith in the government than either individuals or companies to effectively tackle the air pollution problem. When asked to examine the relative effectiveness of government regulations and enforcement versus voluntary action by individuals or companies, Canadians clearly perceive government regulations and enforcement as the more effective approach.

AIR QUALITY INDEX

- A slight majority of Canadians are at least somewhat familiar with the air quality index. However, this familiarity tends to be very soft. Four in ten (41%) say that they are somewhat familiar with this index, while only one in ten (11%) are very familiar with it.

- A plurality of Canadians (42%) report occasional use of the air quality index; four in ten (40%) have never used it. Almost two in ten (17%) report using it frequently.

- Six in ten of those Canadians who are not at all familiar with the air quality index suggest that they would be at least somewhat likely to use it in the future.

- Respondents were presented with three possible formats for the air quality index (numerical, descriptive and visual) and asked in what format it should be delivered. A plurality (43%) feel that it should be provided descriptively (e.g., good, fair, or poor, etc.). One-quarter (26%) prefer a numerical index. Two in ten (20%) say that air quality messages should be provided in a visual format (e.g., symbols).

- Most Canadians would take action when faced with an air quality warning. Three-quarters say they or someone in their household would act differently if an air quality warning were issued. The most frequently mentioned reactions to such a warning would be to stay indoors, cut down on the use of personal motor vehicles, and limit or avoid strenuous exercise outdoors.

SOURCES OF AIR POLLUTION

- Industrial/factory emissions and vehicle emissions are seen as the major sources of air pollution.

PERSONAL ACTION

- Nine in ten Canadians agree that individuals can take actions that will effectively reduce air pollution.

- Among those who feel that such actions are not possible, a plurality suggest that even if individuals took action, it would not make any difference.

- Reducing personal vehicle use and taking alternative methods of transportation such as public transport or carpooling to work are the most frequently mentioned activities that individuals can do to reduce air pollution.

- Canadians appear to be most willing to choose a more fuel-efficient car, learn more about efficient driving habits and take alternative methods of transportation to work to combat air pollution. They are least willing to pay more for gasoline or other non-renewable fuels, pay higher taxes to support action against air pollution, and support or join an environmental group to help reduce air pollution.

INFORMATIONAL BEHAVIOUR

- More than four in ten Canadians (45%) say that they look for information on smog or levels of air pollution in their area at least occasionally. Almost two in ten (17%) report that they frequently look for such information. Thirty-seven percent have never looked for this type of information.

- Newspapers, TV news and the Internet are the most frequently mentioned sources of air pollution information.

- It is clear that Canadians want to have air pollution information at their disposal regardless of the conditions. More than eight in ten (83%) think that information on air pollution should be provided all the time, compared to 16 percent who feel it should only be provided when there is a problem with air pollution.

- When presented with a list of various kinds of air pollution information, more than eight in ten Canadians feel that each type of information is somewhat or very useful. In fact, at least a majority suggest that each type of information is very useful. Canadians feel that information regarding the human health effects of air pollution, the types of pollutants causing poor air quality and what individuals can do to reduce air pollution is the most useful.

- Canadians tend to offer positive assessments regarding the credibility of the various information sources we reviewed in this survey. All of the sources, except the Internet and municipal governments, are seen as either somewhat or very credible by more than eight in ten Canadians. Environment Canada and Health Canada are seen as the most credible sources of air pollution information, while municipal governments and the Internet are seen as less credible.

SUMMARY OF THE QUALITATIVE RESULTS

A total of six focus group discussions regarding the air quality index (AQI) were held from October 23-25, 2001, two each in Montreal, Toronto and Vancouver. Participants in these sessions were segmented according to their opinion leader status (three questions that collect self-rated impressions of awareness, engagement and efficacy) and each session included participants who suffered from ailments related to air quality. In addition to an overall gender balance, a range of incomes, education levels and ages were present in each session. Although every effort was made to assemble participants that are representative of the local population, qualitative results cannot be extrapolated to provide statistically representative results.

Overall, participants in all three locations, especially those in Toronto, were concerned about the quality of the air, with a sense that the quality of air is in decline. Older participants were the most likely to comment on worsening air quality. Pollution from industrial production, followed by vehicle emissions, was seen to be the primary sources of air pollution and declining air quality. In terms of seasonal effects, there was a consensus that summer posed the greatest challenge in terms of air quality, although there was a feeling among some participants that air quality problems were beginning to surface throughout the year.

Participants were able to enumerate a number of ways that they, as individuals, could reduce air pollution in their communities, ranging from reduced use of single-person vehicles to personal advocacy roles. However, participants, especially those with children or long commutes, were concerned that lack of convenience and practicality, as well as laziness, were the main barriers to undertaking these activities. Further, many participants did not see why they, as individuals, should shoulder the burden for taking action to reduce pollution when industry was seen to be at fault. Many participants were also critical of governments for their perceived inactivity on this file.

Although voluntary action to reduce air pollution was preferred by participants, this was not seen as the most effective way to promote change and obtain results. Despite the coercive overtones, there was a strong preference for a regulatory approach to this problem, especially if this approach were to be applied equally to individuals, industries and governments. Participants in both Vancouver and Toronto mentioned vehicle emission tests as one effective regulatory activity.

With the exception of Vancouver, there were low levels of awareness among participants, regardless of different demographic characteristics, about the existence of an air quality index and how it might apply to their situation. Participants in all sessions receive their information on air quality as part of the weather broadcasts on the Weather Channel or MétéoMédia (the most frequently mentioned information source), television news or regular radio broadcasts. Although individuals who had air quality-related ailments took slightly greater notice of this information, parents of children with air-quality related ailments were most likely to pay attention to, and act on, this information.

For the most part, participants, especially those with children suffering from air-quality related ailments, appeared to be very interested in receiving information on air pollution and air quality. Those who said that they would appreciate the information stressed the importance of sensitizing people to this issue and increasing consciousness of this problem. They would also like the information because it helps them to plan outdoor activities and minimize the impact that poor air quality might have on their health. Those who did not care to receive this information were either concerned about the utility of this information or were concerned that publicizing this information would increase anxiety or paranoia among the general public.

Participants interested in receiving the air quality index or air quality information, especially those who have health problems or children with health problems, would like to have this information diffused as widely as possible and in readily accessible formats. There were numerous comparisons with the ultraviolet light index (UV index) and, in addition to adopting a similar approach with the scale and consequences, there was a preference to use many of the same vehicles used by the UV index for the dissemination of this information: the Weather Channel/MétéoMédia, the weather section in newspapers, the Internet and broadcast weather reports. There was also the suggestion that this information could be provided at major transit system platforms (Subway, Metro and SkyTrain). Although there is an expectation that this information would be widely available, participants emphasized that this information should be presented in a factual, non-sensational way that individuals could understand and use.

Although this information would be available on a regular basis, participants felt that an additional effort should be made to publicize the data whenever there is a serious public health concern regarding air quality. Participants pointed out a number of incidents from the past summer where this was the case and where a variety of institutional and media sources co-operated to spread the word.

With regard to the air quality index itself, participants preferred the use of multiple scales to communicate air quality. A numeric scale has the value of providing the quantification of air quality while a semantic scale (excellent, good and so on) is seen to be more descriptive. A number of participants volunteered the use of symbols to describe air quality, given that symbols (a sun for a sunny day, rain clouds to describe rain, and so on) are a common feature in weather reporting. It should be noted that no set of air quality symbols, other than the most rudimentary, emerged from the session and there was an admission that this system would be unworkable for radio. A combination of scales (numeric and descriptive), most participants agreed, would be the ideal way of presenting an air quality index. Further, they would like to see the attachment of a "consequence" to this description, similar to that found with the UV index.

Although there is some awareness of private sector sponsorship of weather information, including the UV index and air quality indicators on the Weather

Channel/MétéoMédia, there was general agreement that private companies would not be appropriate sponsors for this index. Participants want governments to be prudent in the way they spend public moneys, but the air quality index was seen to be supporting public health objectives and individual control over health – two worthy objectives. Support for spending to publicize air quality information was seen as a "no-brainer" when poor air quality endangers lives.

As mentioned earlier, there was a strong belief among participants that this information should be presented in a factual, non-sensational manner. While participants had strong reservations about the credibility of information provided by public companies offering related products and services, there was a consensus that information provided by meteorologists, universities, scientists and experts would be credible and respected. With regard to government departments, there was a sense that Environment Canada would enjoy particular respect and credibility when it came to reporting on weather conditions and environmental impacts. Health Canada, while not seen as having any particular expertise when it comes to assessing weather conditions, was seen to be the most credible in assessing the health impacts of air quality. Health-oriented advocacy groups, such as the Canadian Lung Association or the Heart and Stroke Foundation, were seen as more credible than environmental groups, some of whom were viewed as "too sensational" by some participants.

Montreal participants expressed a preference that the air quality index come from a collaborative effort or partnership rather than from a single source, since this would increase the reliability of the information. While participants in other locations had a slight preference for a more collaborative approach, they felt that a single credible and objective source could also be an effective sponsor of the air quality index.

There was a consensus that whoever sponsors the index should not have financial interest in doing so and there should be only one standard for determining this index to ensure the uniformity and comprehension of the results.

SOCIAL MARKETING IMPLICATIONS AND RECOMMENDATIONS

Based on the research results and our analysis of the data, including the segmentation analysis, we identify the following social marketing implications for consideration by Health Canada:

- In past research conducted by our Advanced Analytical group, we have found that environmental concern and environmental health concern are direct and indirect drivers of environmental action in Canada. From the results of this survey, this relationship appears to be quite strong for action regarding air pollution. Therefore, to help engage Canadians in air issues, it is essential that concern about air pollution must be raised, and its potential impact on health must be made clearer.

- As we saw with the use of the air quality index, raising Canadians' familiarity with key air quality issues generally leads to increased action. The profile of air quality issues, including the existence and utility of the air quality index, must be improved. It appears that the most successful air quality messages will include descriptive air quality information as a key component.

- To help clarify the relationship between air pollution and health, Canadians require more information on the specific effects it has on their health and the extent to which air pollution can affect their health. Currently, only a few doctors are discussing the relationship between air pollution and health with their patients. Health Canada may consider developing a program to help educate health professionals on this relationship and encourage them to discuss it more frequently with their patients, especially those with respiratory problems.

- Another key to increasing action in this area is to break down perceived barriers. In this case, a potential barrier that exists is the mindset that individual actions cannot effectively reduce air pollution. Any outreach program must reinforce the message that effective individual action is

possible and, furthermore, such action does not necessarily pose an undue burden or massive disruption to their daily lives. To help aid this message, outreach efforts should provide clear examples of the activities individuals can do to reduce air pollution.

- It is clear that people with respiratory illnesses represent a key target group. While these individuals already have higher levels of concern and, therefore, are predisposed to take action, the key messages (air pollution is a problem, it has an impact on health, individual action is possible) should be reinforced with this group to maintain the motivations that drive action. Once again, given that those with respiratory illnesses are likely to visit health professionals more often, health professionals could serve as a medium for these key messages.

- Newspapers, TV news, the Internet, the Weather Network/MétéoMédia and radio news are the key sources of air pollution information. In addition, Health Canada, Environment Canada and the mainstream media are the most credible sources of information on this subject. Therefore, communications efforts should try to utilize some combination of these vehicles and sources whenever possible.

- Our attitudinal segmentation analysis for this study found five distinct groups in the Canadian population (Detached Cynics, Concerned and Empowered, Passive Optimists, Paradoxical Fatalists, Anxious and Alienated). Each group approaches air pollution issues from a different set of underlying attitudes that shapes their attitudes and behaviour in this area.

- Effective social marketing campaigns usually focus on a few key messages that are of critical importance. In addition, there are certain groups that may be unreachable or have attitudes that are just too challenging to overcome (e.g., Detached Cynics), while other groups are more susceptible to the key messages and are more likely to be convinced to take action. The following table highlights those key attitudinal groups that should be targeted, along with their key demographic characteristics, information needs and the communications vehicles/ approaches that are likely to prove the most effective in reaching them on this subject.

Summary of Key Social Marketing Implications

Target Group (Key Demographic Characteristics)	Key Information Needs	Communications Vehicles/ Messengers
CONCERNED AND EMPOWERED (35% of population) • Better-educated • $50K-$70K • Women	Reinforce key messages: • Air pollution is a problem • It has a great deal of impact on health and describe what the effects are • Individual action is possible and provide examples	Newspapers Internet Environment Canada Partnerships among governments, health groups and NGOs
PASSIVE OPTIMISTS (8% of population) • 30 to 44 • $30K-$50K • Men • From communities with 5-100K residents	Must build on optimism that individual action is effective Outline possible individual actions The human health effects of air pollution Air pollution is a problem	Environment Canada Health Canada Mainstream media
PARADOXICAL FATALISTS (27% of population) • Less educated • Older • Less affluent • Quebecers	Challenge their fatalist attitudes – convince them that they do have control over their life and can influence their own health Individual action is possible (with examples) Reinforce their concern about air quality and its impact on health Existence and utility of AQI	Mainstream media, especially TV news Federal government Provincial governments Environmental groups
ANXIOUS AND ALIENATED (19% of population) • 30 to 44 • Men • Anglophones • Residents of Ontario, especially Toronto	Challenge the myth that individuals cannot take effective action Individual action is possible (with examples) Reinforce their concern about air quality and its impact on health	Environment Canada Health Canada Mainstream media with more relative emphasis on the Weather Network and radio news

These findings are based on a national survey of 1,213 Canadians, 16 years of age or older and a series of six focus groups (two each) in Toronto, Montreal and Vancouver. The focus group sessions were conducted between October 23-25, 2001, while the national survey was conducted between November 16 and November 25, 2001. Overall, the national survey results are accurate within ±2.8 percentage points, 19 times out of 20.

3.1 Sample Selection

The sampling method was designed to complete approximately 1,200 interviews within households randomly selected across Canada. It is drawn in such a way that it represents the Canadian population with the exception of those Canadians living in the Yukon, Northwest Territories or Nunavut. A sample disproportionate to the population of the provinces was used to allocate interviews, to increase the sample sizes of regions/provinces with smaller populations.

The final sample is distributed as follows.

	Weighted	Unweighted	Margin of Error
Atlantic Provinces	99	200	6.9
Quebec	306	250	6.2
Ontario	454	365	5.1
Manitoba/ Saskatchewan	86	140	8.3
Alberta	110	101	9.8
British Columbia	159	157	7.8
Total	1,213	1,213	2.8

The sampling model relies on the stratification of the population by ten provinces and by six community sizes (1,000,000 inhabitants or more, 100,000 to 1,000,000 inhabitants, 25,000 to 100,000 inhabitants, 10,000 to 25,000 inhabitants, 5,000 to 10,000 inhabitants, and under 5,000 inhabitants).

Environics uses a modified Waksburg Mitofsky sample selection technique. Telephone numbers are selected from the most recently published telephone directories. These numbers act as "seeds" from which the sample is actually generated. The original "seed" telephone numbers are not used in the sample. The Waksburg Mitofsky sample selection technique ensures both unlisted numbers and numbers listed after the directory publication are included in the sample.

A total of 12,120 telephone numbers were drawn. From within each household contacted, respondents 16 years of age and older were screened for random selection using the "most recent birthday" method. The use of this technique produces results that are as valid and effective as enumerating all persons within a household and selecting one randomly.

In the data analysis, the results of the survey were weighted to reflect the actual proportion of over- and under-sampled segments in the population. For this survey, results have been weighted by age, gender and region.

3.2 Telephone Interviewing

Interviewing was conducted at Environics' central facilities in Toronto and Montreal. All interviews were completed in the respondents' official language of choice.[1]

Field supervisors were present at all times to ensure accurate interviewing and recording of responses. Ten percent of each interviewer's work was unobtrusively monitored for quality control in accordance with the standards set out by the Canadian Association of Marketing Research Organizations.

A minimum of five calls were made to a household before classifying it as a "no answer."

3.3 Completion Results

A total of 1,213 interviews were completed.

The effective response rate for the survey is 14 percent: the number of completed interviews (1,213) divided by the total sample (12,120) minus the non-valid/non-residential numbers, the numbers not in service and the numbers that presented a language barrier (3,207).

1 All interviews conducted in French were completed by residents of Quebec.

The actual completion rate is 31 percent: the number of completed interviews (1,213) divided by the number of qualified respondents contacted directly (3,969).

The margin of error for a sample of 1,213 is ±2.8 percentage points, 19 times in 20. The margins are wider for regional and demographic subsamples.

The following table presents the detailed completion results for this survey of 1,213 interviews.

COMPLETION RESULTS TABLE

	#	%
Number of calls	12,120	100
Household not eligible	194	2
Non-residential/not in service	2,660	22
Language barrier	353	3
Subtotal	3,207	27
New Base (12,120 – 3,207)	8,913	100
No answer/line busy/ respondent not available	4,944	56
Refusals	2,682	30
Mid-interview refusals	74	1
Subtotal	7,700	86
Net Completions (8,913 – 7,700)	1,213	14
Completion Rate (1,213/[8,913-4,944])		31

3.4 Focus Group Methodology

Environics conducted a series of six focus group sessions, two each in Vancouver, Montreal and Toronto. Each session was held in a professional focus group facility, which allowed for the unobtrusive observation of the sessions by representatives of Health Canada. As well, each session was audiotaped and transcriptions were created for use in the analysis.

As per industry standards, focus participants were screened to ensure that they or anyone in their household did not work for an advertising or market research firm, the media, the federal public service, or an elected official. In addition, we ensured that participants had not been to a focus group or discussion group within the past six months and had not been to five or more such groups in their lifetime.

Participants in each session were recruited according to a variety of attitudinal and demographic criteria determined in consultation with the Health Canada Project Authority (a copy of the recruiting guide has been appended to this report). In each location, one session was conducted among "opinion leaders" from the general public and one session was conducted among "non-opinion leaders." An opinion leader is an individual who pays attention to public policy issues, and who communicates their opinion outside of their immediate circle of family and friends. In addition, quotas were used to ensure that participants reflected a range of ages and educational backgrounds, as well as a rough gender balance. For example, we ensured that a range of ages (at least two persons over 60 years of age) was represented. At least four participants in each group had to suffer from at least one of six air-quality related health problems (e.g., asthma, breathing difficulties, chronic bronchitis, other respiratory problems, heart problems or high blood pressure). As a final check, only those potential participants who were not members of any environmental organizations were allowed to participate in the groups.

Sessions held in Montreal were conducted in French with the remaining sessions conducted in English. Each session was approximately two hours in length and was conducted according to a moderator's guide designed in consultation with the Health Canada project team (a copy of which has been appended to this report). Each participant received a $50 honorarium for his or her participation. It should be noted that the confidentiality of this process was stressed with each participant at the start and at the end of each session.

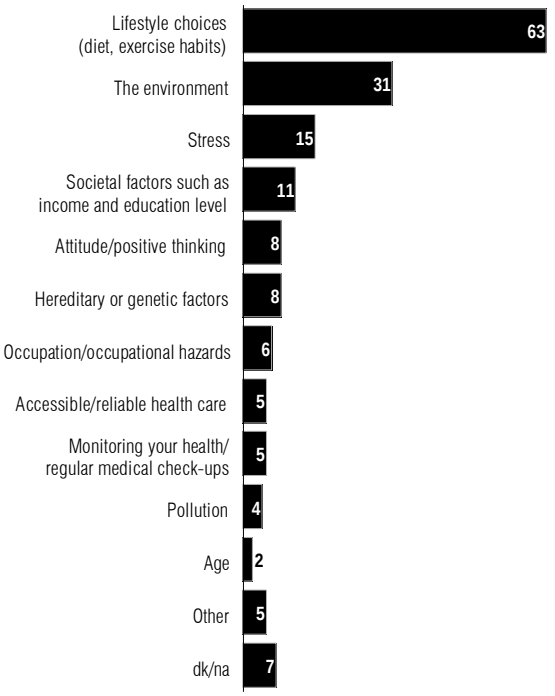
Canadians face a number of challenges to their health throughout their lives. In this survey we asked respondents to identify those factors that they thought had an impact on a person's health. Furthermore, we obtained their perceptions with respect to the factor that had the biggest impact on the health of Canadians.

4.1 Factors Influencing Health

Lifestyle choices and the environment are the most frequently cited factors that have an impact on a person's health.

When asked, top-of-mind, to identify factors that have an impact on a person's health, a clear majority of Canadians (63%) identify lifestyle choices such as diet and exercise. One-third (31%) spontaneously suggest that the environment has an impact on health. More than one in ten Canadians each mention stress (15%) or societal factors such as income and education levels (11%). Other factors identified include attitude/positive thinking (8%), hereditary or genetic factors (8%), occupation or occupational hazards (6%), accessible or reliable health care (5%), monitoring your health (5%), pollution (4%) and age (2%). Five percent of Canadians mention a variety of other factors.[2] Seven percent offer no response to this question.

Factors impacting health



Q.1
In your opinion, what factors have an impact on a person's health? Any other factors? (n=1,213)
Multiple responses allowed

Canadians with an annual household income between $50,000 and $70,000 (74%), Atlantic Canadians (73%), university graduates (70%) and those with an annual household income of more than $70,000 (68%) are the most likely to suggest that lifestyle choices have an impact on a person's health. In addition, men (66%) and anglophones (66%) are more likely than women (60%) and francophones (53%) to cite lifestyle choices.

Women (35%) are more likely than men (28%) to say that the environment has an impact on the health of Canadians. The most affluent Canadians (40%) are also more likely to spontaneously mention the environment. In general, those more concerned about the quality of air, those who feel that air pollution has more of an impact on the health of Canadians, and those who feel that air pollution in their community has become worse are more likely than others to identify the environment as a factor that can influence a person's health. Similarly, those with a respiratory illness are more likely to mention the environment as a factor that has an impact on a person's health.

It is interesting to note that those with a respiratory illness are also more likely to identify stress as a factor that has an impact on a person's health (20% vs. 14%). Residents of British Columbia (22%), those between 30 and 44 years of age (20%) and those with a college education (20%) are also more likely to identify stress as one of these factors.

2 These "other" factors include family and friends, government, media/TV, chemicals and war/terrorism.

The most affluent and most educated Canadians are more likely than others to cite societal factors and hereditary or genetic factors as influences on a person's health.

In general, focus group participants identified similar factors that might impact health, with lifestyle, genetics and the environment being mentioned most often.

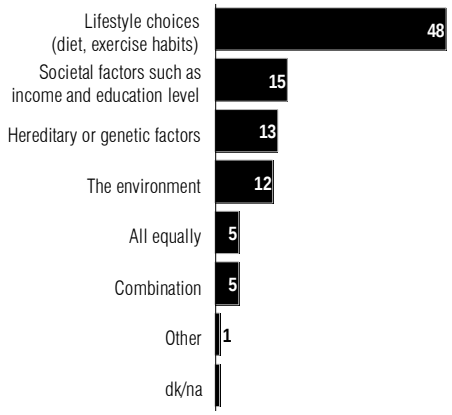
4.2 Relative Importance of Factors Influencing Health

Lifestyle choices are seen as having the biggest impact on a person's health.

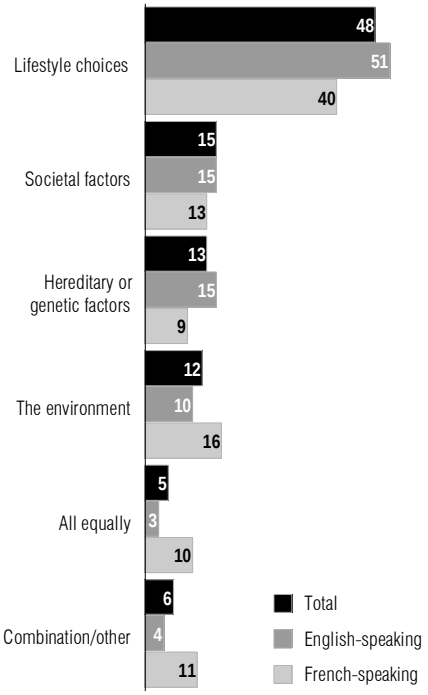
We presented respondents with a list of four factors that can impact a person's health (the environment, lifestyle choices, hereditary or genetic factors and societal factors) and asked them which one has the biggest impact on health. Almost one-half of Canadians (48%) feel that lifestyle choices have the biggest impact. More than one in ten each believe societal impacts (15%) and hereditary or genetic factors (13%) have the biggest impact. While the environment is the second most frequently cited factor (31%) having an impact on a person's health, only 12 percent of Canadians suggest that the environment has the biggest impact on health of the various factors we examined in this question. Fewer Canadians suggest that a combination of these factors (5%) or all of them equally (5%) have the most influence on health.

Anglophones are more likely than francophones to suggest that lifestyle choices (51% vs. 40%) and hereditary factors (15% vs. 9%) have the biggest impact on a person's health. On the other hand, francophones (16%) place greater emphasis on the environment than do anglophones (10%). In addition, francophones are more likely than anglophones to suggest that a combination of these four factors (11% vs. 3%) has the most impact on health or that all of them have an equal impact (10% vs. 3%).

Factor with biggest impact on a person's health



Factor with biggest impact on a person's health
By language



Q.2
Which of the following factors do you think has the biggest impact on a person's health ... the environment ... lifestyle choices (e.g. diet, exercise habits) ... hereditary or genetic factors ... societal factors such as income and education level? (n=1,213)

From a regional perspective, we find that Albertans (63%), residents of Manitoba and Saskatchewan (57%) and Atlantic Canadians (56%) are more inclined than other Canadians to believe that lifestyle choices have the biggest impact on a person's health. Residents of Ontario (18%) place relatively more importance on hereditary or genetic factors.

While Canadians between 16 and 29 years of age (55%) are more likely to say that lifestyle choices have the biggest impact on the health of Canadians, those 60 years of age or more (19%) are relatively more likely to see hereditary or genetic factors as having the most influence.

Better educated and more affluent Canadians and those who reside in communities with between 100,000 and one million people tend to place more importance on lifestyle choices. Those with a high school education or less and those with an annual household income of less than $30,000 are relatively more likely to suggest that the environment has the biggest impact on a person's health.

Canadians who feel that air pollution has a great deal of effect on the health of Canadians are more likely than those who feel that air pollution has little to no effect to suggest that the environment has the biggest influence on health (14% vs. 4%).

When we explored the relative importance of various factors in the focus group sessions, a number of interesting differences emerged in the three centres. Montreal participants tended to see lifestyle choices or stress as the most influential factor that impacts a person's health. Focus group participants in the Vancouver sessions tended to view genetics or the environment as the factor that has the biggest impact. Toronto participants argued that no one factor has the biggest impact, rather it is a combination of factors that influence a person's health. Most of the participants in the two Toronto sessions felt that either a combination of genetics and the environment or an even more encompassing combination of the environment, genetics and lifestyle choices has the biggest impact on the health of Canadians.

To help us understand where air pollution stands compared to other environmental problems, we asked Canadians to identify the most important environmental problem in the country today. We also assessed their level of concern about air quality with respect to a number of other environmental issues.

5.1 Most Important Environmental Problem

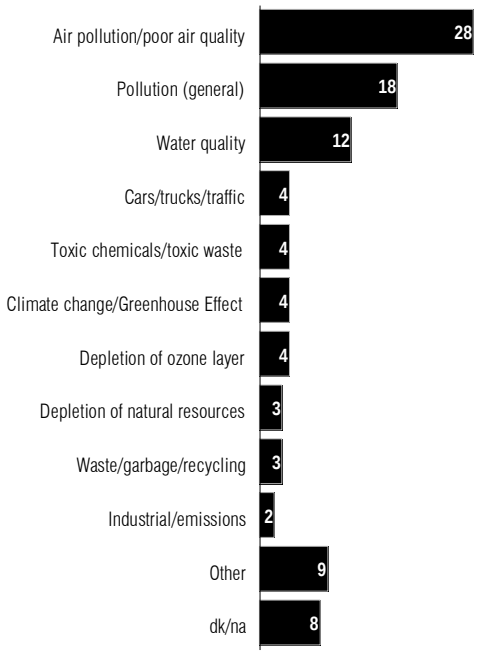
Air pollution or poor air quality, pollution in general and water quality are seen as the most important environmental problems.

It is clear that air quality issues are at the forefront when Canadians think about environmental problems facing the country. More than one-quarter of Canadians (28%) cite air pollution or poor air quality as the most important environmental problem facing Canadians today. Almost two in ten (18%) provide general comments about pollution as the most important problem. Twelve percent feel that water quality is the most important environmental problem facing this country. Other less frequently mentioned problems include cars/trucks/traffic (4%), toxic chemicals or toxic waste (4%), climate change/Greenhouse Effect (4%), depletion of the ozone layer (4%), depletion of natural resources (3%), waste/garbage/recycling (3%) and industrial/emissions (2%). Nine percent of Canadians identify various other environmental problems[3] as being the most important. Eight percent offer no opinion; one percent believe that there is no important environmental problem facing Canadians today.

Quebecers (39%) are much more likely than Albertans (22%), Atlantic Canadians (19%) and residents of Manitoba and Saskatchewan (15%) to say that air pollution or air quality is the most important environmental problem facing Canadians today. Given this finding, it is not surprising to find that francophones (40%) place greater importance on air pollution/air quality than do anglophones (25%). Canadians with some university education (37%), those between 45 and 59 years of age (33%), those who are very concerned about air quality (33%) and those from large urban centres of one million or more residents (33%) are also more likely to identify air pollution/air quality as the most important environmental problem in the country. In addition, those who think that air pollution affects health a great deal (31%) or somewhat (26%) are much more likely than those who believe it has little or no effect (18%) to cite air pollution/air quality as the most important environmental problem.

Women (21%) and Canadians with a respiratory illness (22%) are more likely than men (15%) and those without a respiratory illness (17%) to make general comments about pollution when asked about their perceptions of the most important environmental problem today.

Most important environmental problem



Q.3
In your opinion, what is the most important environmental problem, if any, facing Canadians today? (n=1,213)
Multiple responses allowed

3 The "other" responses include such things as acid rain, biological terrorism, poverty, environmental ignorance or apathy, urban sprawl and use of biotechnology.

Water quality is more likely to be seen as the most important environmental problem by men (15%) and anglophones (14%) than women (9%) and francophones (6%).

Atlantic Canadians (15%, dk/na) have the most difficulty or resistance to offering an opinion on this question.

According to most Montreal focus group participants, the most important environmental problem facing Canada today is pollution; there was some debate as to whether air or water pollution is more critical, although a consensus was reached that the two are related events and therefore equally important. Montreal participants also identified a number of other environmental problems that are identified in the quantitative survey. In general, Toronto and Vancouver focus group participants also identified many of these same problems. However, it is worth noting that Vancouver participants seemed slightly more likely than those in the Toronto sessions to place more emphasis on air pollution.

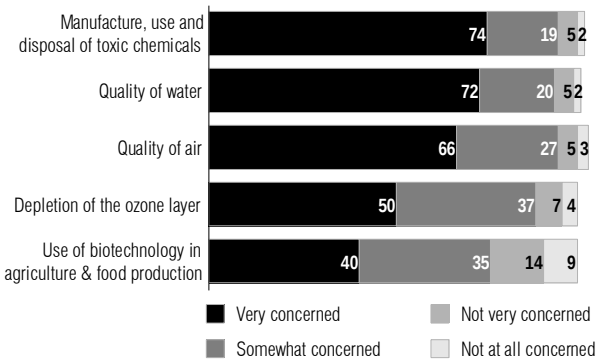
5.2 Relative Concern about Various Environmental Issues

Canadians are most concerned about the manufacture, use and disposal of toxic chemicals, water quality and air quality. They are less concerned about the depletion of the ozone layer and the use of biotechnology in agriculture and food production.

We presented respondents with a list of five environmental issues (the manufacture, use and disposal of toxic chemicals, quality of air, quality of water, the depletion of the ozone layer and the use of biotechnology in agriculture and food production) and asked them about their level of concern for each one. Overall, concern for each of these issues tends to be quite high, although the strength of this concern varies quite considerably.

More than nine in ten Canadians (93%) are very (74%) or somewhat (19%) concerned about the manufacture, use and disposal of toxic chemicals. Concern about water quality (72% very concerned, 20% somewhat concerned) and air quality (66% very concerned, 27% somewhat concerned) is also very high among the Canadian public. Even though overall concern is still high, the strength of this concern is much lower regarding the depletion of the ozone layer (50% very concerned, 37% somewhat concerned) and the use of biotechnology in agriculture and food production (40% very concerned, 35% somewhat concerned).

Level of concern regarding various environmental issues



Q.4a-e
I'd like to ask you about various environmental issues. Are you very, somewhat, not very, or not at all concerned about each of the following ... The manufacture, use and disposal of toxic chemicals ... The quality of air ... The quality of water ... The depletion of the ozone layer ... The use of biotechnology in agriculture and food production? (n=1,213)

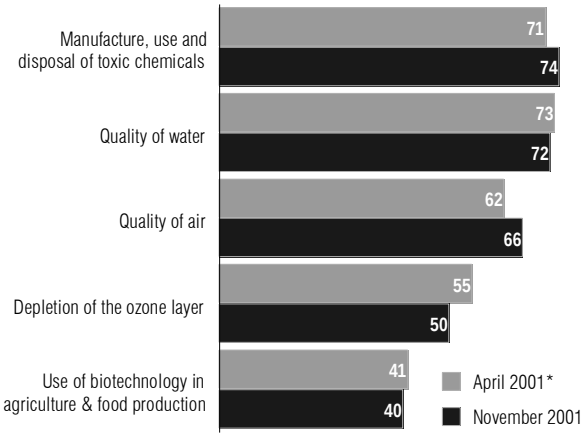
The level of concern about these various environmental issues has changed very little over the course of the year. In general, Canadians now are slightly more concerned about the manufacture, use and disposal of toxic chemicals and air quality than they were in April, but are less concerned about the depletion of the ozone layer.

Overall, women tend to have higher levels of concern about each of these environmental issues than do men. This difference is most notable for the depletion of the ozone layer (55% very concerned vs. 44%) and the use of biotechnology in agriculture and food production (46% very concerned vs. 35%).

Canadians between 45 and 59 years of age tend to be the most concerned overall about the environmental issues we explored in this survey, while those between 16 and 29 years of age tend to be the least concerned.

Level of concern regarding various environmental issues

Very concerned



Q.4a-e
I'd like to ask you about various environmental issues. Are you very, somewhat, not very, or not at all concerned about each of the following ... The manufacture, use and disposal of toxic chemicals ... The quality of air ... The quality of water ... The depletion of the ozone layer ... The use of biotechnology in agriculture and food production? (n=1,213)
** The April 2001 results are from Environics 2001-1 Environmental Monitor*

Level of concern regarding various environmental issues

By age Very concerned

	TOTAL	16 TO 29	30 TO 44	45 TO 59	60 OR MORE
The manufacture, use and disposal of toxic chemicals	74	64	77	81	74
The quality of water	72	65	72	76	75
The quality of air	66	59	67	71	66
The depletion of the ozone layer	50	45	53	55	46
The use of biotechnology in agriculture and food production	40	37	36	41	48

Q.4a-e
I'd like to ask you about various environmental issues. Are you very, somewhat, not very, or not at all concerned about each of the following ... The manufacture, use and disposal of toxic chemicals ... The quality of air ... The quality of water ... The depletion of the ozone layer ... The use of biotechnology in agriculture and food production? (n=1,213)

Apart from the manufacture, use and disposal of toxic chemicals, francophones have higher levels of concern about these environmental issues than do anglophones. Regionally, we find that while Quebecers have higher levels of concern for most of these issues, residents of the Prairies tend to be somewhat less concerned.

Canadians who feel that the environment has the biggest impact on health are more likely to be very concerned about the various environmental issues. However, it is worth noting that this relationship is not as evident with respect to concerns about air quality.

Canadians who have higher levels of concern about one environmental issue also tend to have higher levels of concern about other environmental issues. If they are concerned about air quality, they are also more likely to be concerned about water quality, the manufacture, use and disposal of toxic chemicals, the depletion of the ozone layer, and the use of biotechnology in agriculture and food production. For example, more than eight in ten Canadians who are very concerned about air quality (86%) also say that they are very concerned about water quality, whereas only 28 percent of Canadians who are not concerned about air quality report that they are very concerned about water quality.

It is not surprising to find that respondents who think that air pollution greatly affects the health of Canadians (82%) are much more likely than those who feel it only affects health somewhat (51%) or not much at all (31%) to suggest that they are very concerned about air quality. Similarly, Canadians who argue that the air pollution in their community has become worse in the last five years (77%) are more likely than those who feel that it has improved (65%) or stayed the same (58%) to be very concerned about air quality.

In general, Canadians with respiratory illnesses are more likely to be very concerned about these environmental issues than are Canadians who have not been diagnosed with a respiratory illness. This difference is most significant for air quality (72% vs. 64%) and the depletion of the ozone layer (57% vs. 48%).

Level of concern regarding various environmental issues

By biggest impact on health Very concerned

	Total	Environment	Lifestyle	Hereditary Genetics	Societal
The manufacture, use and disposal of toxic chemicals	74	80	72	73	80
The quality of water	72	78	71	66	78
The quality of air	66	68	66	59	72
The depletion of the ozone layer	50	56	48	42	54
The use of biotechnology in agriculture and food production	40	51	36	39	47

Q.4a-e

I'd like to ask you about various environmental issues. Are you very, somewhat, not very, or not at all concerned about each of the following ... The manufacture, use and disposal of toxic chemicals ... The quality of air ... The quality of water ... The depletion of the ozone layer ... The use of biotechnology in agriculture and food production? (n=1,213)

In the focus group sessions, participants generally had mixed views about the seriousness of air quality. While certain participants, especially those who indicated that they had some respiratory problems, tended to be more concerned about air quality, others did not have the same level of concern and did not see it as a major problem. The following points illustrate focus participants' level of concern about air quality:

"It's not a daily concern that I fret over."

"When I actually am breathing yeah... I'm not from Toronto, I grew up in the country. The air was good but since I moved here I've had problems and it's gross."

"I now am very, very aware that on really smoggy days I do not go down to the lake front, I don't take the kids outside. It has definitely affected our lifestyle."

"I mean, we're getting those smog alerts more and more often."

"If you look back towards Vancouver, you'll see a yellow haze running straight as far as the eye can see. And that's something that's happened over the last 15 years. It's definitely getting noticeable."

"I don't think it (air quality) is uppermost in most people's minds."

The relationship between air pollution and human health is very complex and has been debated by scientists, advocates, governments, industry and individual citizens. Therefore, we sought to gain a deeper appreciation of Canadians' views and experiences in this area by investigating a number of different issues. In particular, we explored the extent to which Canadians feel that air pollution impacts the health of Canadians, including the specific effects it might have on human health and their perceptions of the health effects of indoor versus outdoor air pollution. We also asked Canadians if they felt that they suffered any health problems due to air pollution and if they had ever been diagnosed with a respiratory illness. In addition, we investigated their experience with health care professionals on the subject of air pollution and health.

6.1 Effect of Air Pollution on the Health of Canadians

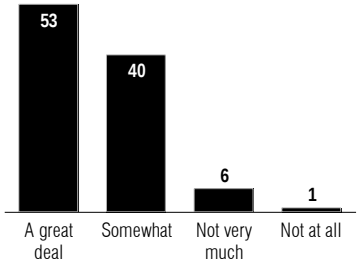
A majority of Canadians believe that air pollution affects the health of Canadians a great deal. Respiratory and lung problems, asthma and cancer are seen as the most likely effects on human health.

It is clear that Canadians feel that air pollution affects the health of Canadians. A majority (53%) say that it affects health a great deal, while another 40 percent believe that air pollution "somewhat affects" the health of Canadians. Six percent say that air pollution does not affect health very much, while another one percent feel that it does not affect health at all. It seems that concern about possible health effects is higher than it was in October 2000, when more than eight in ten Canadians (84%) said it had a moderate or major effect and more than one in ten (14%) said it had only a mild effect.[4]

Men and women have very different views regarding the extent to which air pollution affects the health of Canadians. Overall, women place a much greater emphasis on the potential health effects of air pollution than do men. Six in ten women (60%) say that air pollution affects the health of Canadians a great deal, in comparison with more than four in ten men (45%) who make this same assessment. Men are more likely than women to say that air pollution only affects health somewhat (44% vs. 35%) or not very much (10% vs. 3%).

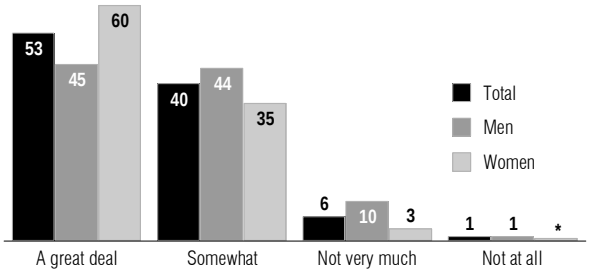
Francophones (58%) are more likely than anglophones (51%) to feel that air pollution greatly affects the health of Canadians. Those who feel the environment has the biggest impact on health (64%), those with a respiratory illness (62%), those who feel that air pollution in their community has become worse over the last five years (61%), those with an

Perceived effect of air pollution on Canadians' health



Perceived effect of air pollution on Canadians' health

By gender



* Less than one percent

Q.5
In your view, to what extent does air pollution affect the health of Canadians? Does it affect them a great deal, somewhat, not very much or not at all? (n=1,213)

4 In the EKOS survey, respondents rated the health affect of air pollution on a 7-point scale, where a score of 1-3 was considered a mild affect, 4 a moderate affect, and 5-7 a major affect.

annual household income of less than $30,000 (60%) and those between 45 and 59 years of age (59%) are also more likely to believe that air pollution greatly affects the health of Canadians.

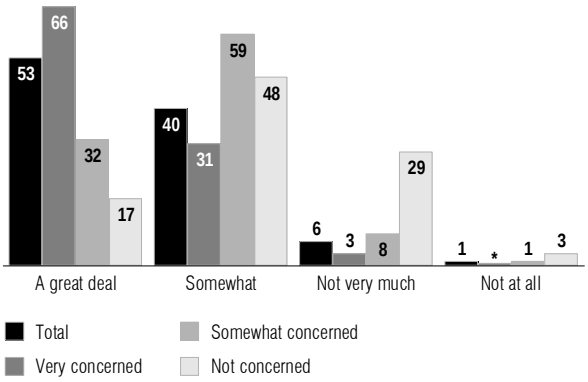
Residents of Manitoba and Saskatchewan (54%), Albertans (52%) and the most affluent (48%) are more tentative regarding the effects of air pollution on health and tend to suggest that it only affects health somewhat.

As Canadians' level of concern about air quality increases, so too does the likelihood that they assign a higher degree of influence on health to air pollution. Therefore, it appears that concern about air quality may be related to the perceived detrimental effects of air pollution on health.

A majority of Canadians (56%) provide various general comments about respiratory and lung problems when asked to identify the effects on human health that are most likely to occur as a result of air pollution. Nearly four in ten (37%) think that Canadians are likely to suffer from asthma as a result of air pollution. Cancer is seen as a possible consequence of air pollution by one-quarter of Canadians (24%). One in ten (11%) suggest that allergies are likely to occur as a result of this environmental problem. Other human health effects cited include general health problems (8%), bronchitis (6%), heart disease (5%), skin rashes and irritation (3%), death or a shorter life span (2%), fatigue or loss of concentration (2%) and new diseases or lessened resistance (2%). Seven percent identify a variety of other[5] possible effects on human health. One percent suggest that no health effects are likely, while four percent offer no response.

Perceived effect of air pollution on Canadians' health

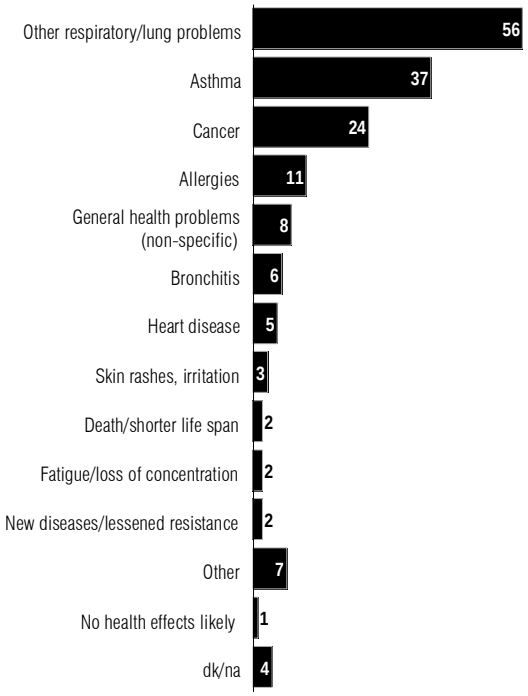
By concern about air quality



*Less than one percent

Q.5
In your view, to what extent does air pollution affect the health of Canadians? Does it affect them a great deal, somewhat, not very much or not at all? (n=1,213)

Specific effects of air pollution



Q.6
What specific effects on human health do you think are most likely to occur as a result of air pollution?
Subsample: All respondents except those who believe it is not at all likely that air pollution affects the health of Canadians (n=1,204)
Multiple responses allowed

5 These "other" responses included food chain contamination, eye problems, reproductive or developmental problems, cold, flu, headaches, high blood pressure and multiple sclerosis.

While women (41%) are more likely than men (32%) to identify asthma as a possible health effect due to air pollution, men (27%) are more likely than women (22%) to suggest that cancer is a possible human health effect.

Anglophones (63%) are much more likely than francophones (36%) to make general comments about respiratory or lung problems as being possible health effects of air pollution. Francophones assign greater emphasis to allergies (16% vs. 9%) and bronchitis (10% vs. 5%).

Canadians who are concerned about air quality (very concerned, 57%; somewhat concerned, 58%) and those who feel that the air pollution situation in their community has become worse in recent years (62%) are more likely than those who are not concerned about air quality (40%) and those who feel that air pollution has improved in their area (47%) to make general comments about respiratory or lung problems when asked to identify the effects on human health that are most likely to occur as a result of air pollution. Other groups who tend to make this same assessment include residents of British Columbia (70%), the most affluent (68%), those with at least some university education (65%), residents of Ontario (64%) and university graduates (62%).

Albertans (47%), those with at least some university education (44%), those with an annual household income between $50,000 and $70,000 (44%) and those who reside in communities with between 5,000 and 100,000 inhabitants (43%) are more likely to suggest that asthma is the most likely health problem to occur as a result of air pollution. Canadians with respiratory illnesses are more likely than those without such illnesses to say asthma is the most likely effect on human health (44% vs. 35%). Those with respiratory illnesses also place greater emphasis on allergies (17% vs. 10%).

It is interesting to note that those Canadians who feel that air pollution greatly affects health are the most likely to identify cancer as the most likely health outcome of air pollution. Those more concerned about air quality also have a greater propensity to make this same assessment.

The list of specific human health effects identified in the quantitative survey, and the emphasis on respiratory and lung problems, is very similar to that generated by participants in the focus group sessions that took place prior to the fielding of the questionnaire. Below, we provide a sampling of the discussion in the focus group sessions regarding the specific human health effects of air pollution:

"Yeah... I never had any problems there, but here I've had bronchitis, pneumonia, all sorts of things."

"I work in a hospital ... the numbers of people that go to emergency with respiratory difficulties, my guess is that has increased dramatically in the last ten, 15 years for sure. Probably incrementally too."

"The body needs oxygen, so if you just breath in air pollution, I think that definitely affects your performance as well as energy levels, concentration, just the ability to function normally."

"I guess asthma is on the rise; that's where you can see asthma is on the rise due to pollutants in the air, air quality."

In addition, focus group participants in each of the three centres tended to identify children, the elderly and those people with respiratory problems as groups that are most susceptible to the effects of air pollution on their health.

Overall, one-quarter of Canadians currently suffer or have suffered from health problems that they feel were due to air pollution. Two in ten have been diagnosed with a respiratory illness. Asthma and bronchitis are the most prominent respiratory problems.

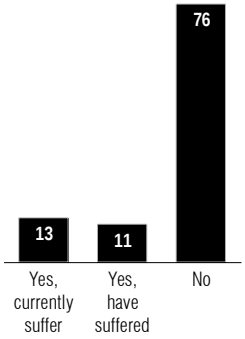
While three-quarters of the Canadian population (76%) report that they have not suffered (or do not suffer) any health problems that they feel were due to air pollution, a significant minority do suffer (or have suffered) from such health problems. Overall, one-quarter of Canadians (24%) currently suffer (13%) or have suffered (11%) from health problems that they feel were caused by air pollution.

Ontarians (29%) are the most likely to report that they currently suffer or have suffered health problems due to air pollution. Given that Ontario tends to have higher levels of pollution than other regions of the country, it is not surprising that they would be more likely to assign some blame for any health problems to air pollution. Atlantic Canadians (18%), Quebecers (18%) and residents of Manitoba and Saskatchewan (18%) are less likely to make this connection between their health problems and air pollution.

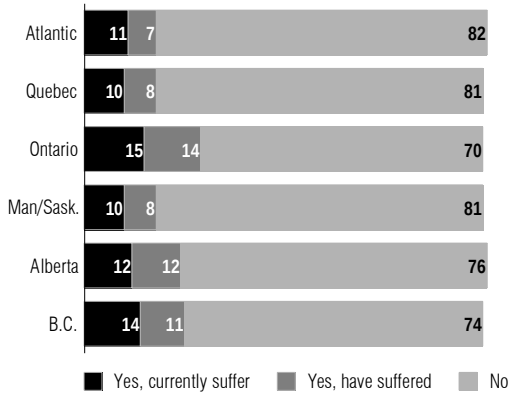
Most Canadians with respiratory illnesses attribute their health problems to air pollution. Six in ten who have been diagnosed with a respiratory illness (61%) report that they currently suffer (39%) or have suffered (22%) from a health problem that was due to air pollution. Almost four in ten (38%) feel that they do not or have not suffered any health problems caused by air pollution.

Canadians who say that air pollution affects health a great deal (30%) and those who think that air pollution in their community has become worse (29%) are more likely to report that they currently suffer or have suffered health problems due to air pollution. Canadians who are not concerned about air quality (5%), those who feel that air pollution has little to no effect on health (13%) and those without respiratory illnesses (14%) are the least likely to say they currently suffer or have suffered any health problems that they attribute to air pollution.

Health problems due to air pollution



Health problems due to air pollution
By region



Q.8
Do you personally suffer, or have you suffered, any health problems that you feel were due to air pollution? (n=1,213)

Two in ten Canadians (21%) say that a doctor has told them that they had a respiratory illness; eight in ten (79%) have not been diagnosed with such health problems.

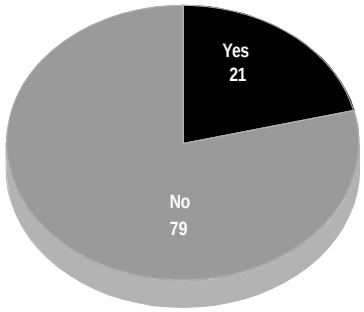
Residents of Ontario (26%) and those Canadians who reside in communities with between 5,000 and 100,000 inhabitants (26%) are the most likely to indicate that they have been diagnosed with a respiratory illness. On the other hand, Quebecers (15%), those who feel that air pollution has little to no effect on health (15%) and those not concerned about air quality (12%) are the least likely to have received such a diagnosis. Women (24%) and anglophones (23%) are more likely than men (18%) and francophones (15%) to have been told by a doctor that they had a respiratory illness.

Respondents who have been diagnosed with a respiratory illness were asked which illness(es) they had been diagnosed with. Asthma (52%) and bronchitis (31%) are cited most often. Approximately one in ten each mention pneumonia (13%), general comments about respiratory or lung problems (11%) and allergies (10%). Sinus/nasal problems (5%) and emphysema (2%) are mentioned less frequently. Four percent identified a variety of other respiratory problems.

Due to the limited number of respondents to this question (n=243), demographic differences tend to be indicative rather than statistically significant. Canadians between 16 and 29 years of age who have been diagnosed with a respiratory illness are by far the most likely to indicate that they have been diagnosed with asthma (79%). The most affluent Canadians are also over-represented among those with asthma.

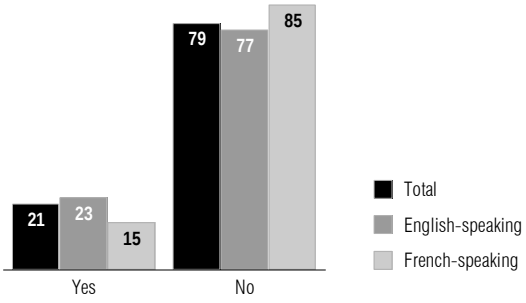
While anglophones with a respiratory illness are more likely than francophones with such an illness to have bronchitis (33% vs. 20%), francophones are more likely than their anglophone counterparts to have been diagnosed with allergies (22% vs. 8%).

Diagnosed with a respiratory illness



Diagnosed with a respiratory illness

By language



Q.9
Has a doctor ever told you that you had a respiratory illness? (n=1,213)

British Columbians with respiratory illnesses are the most likely to report that they have been diagnosed with bronchitis while Quebecers with a respiratory illness are more likely to have allergies.

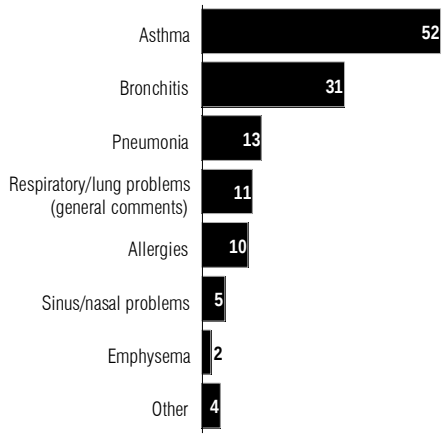
When asked about their specific respiratory illness, less educated and less affluent Canadians tend to provide general comments about respiratory or lung problems rather than identifying a specific ailment.

In general, Canadians think that indoor and outdoor air pollution have the same effects on their health.

As in the focus group sessions, it appears that Canadians do not make a clear distinction regarding the effects of indoor and outdoor air pollution on their health. A majority (55%) feel that these two sources of air pollution have the same effect. Equal proportions think that indoor air pollution is less harmful (21%) or more harmful (21%) to their health than outdoor air pollution. Three percent offer no opinion on this question.

University graduates (60%), those with an annual household income of between $50,000 and $70,000 (60%) and Quebecers (60%) are the most likely to think that indoor air pollution has the same effect on their health as outdoor air pollution. Francophones (59%) are more likely than anglophones (53%) to say that the effect on health is the same for both types of air pollution.

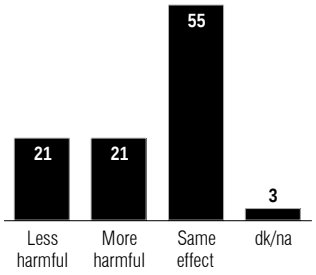
Type of respiratory illness diagnosed



Q.10
What respiratory illness(es) were you diagnosed with? Any others?
Subsample: Respondents whose doctor told them they had a respiratory illness (n=243)
Multiple responses allowed

Health effects of indoor air pollution vs. outdoor air pollution

Indoor air pollution is ...



Q.7
Regarding its effect on your health, do you think indoor air pollution is less harmful, more harmful, or has the same effect as outdoor air pollution? (n=1,213)

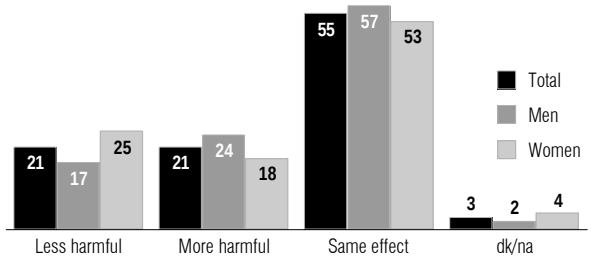
Women (25%) are more likely than men (17%) to say that indoor air pollution is less harmful to their health than outdoor air pollution. Conversely, men (24%) are more likely than women (18%) to say that indoor air pollution is more harmful.

Canadians with less than a high school education (32%) and those 60 years of age or older (26%) are also more likely to think that indoor air pollution is less harmful to their health than outdoor air pollution. On the other hand, Albertans (32%) and those Canadians from communities with between 100,000 and one million inhabitants (26%) tend to feel that indoor air pollution is more harmful.

In the focus group sessions, participants offered a variety of reasons as to why indoor air pollution might be as bad, or worse, than outdoor air pollution. These included noxious gasses emitted by carpet adhesives or office machinery, poor ventilation and cigarette smoking. Overall, the focus group participants could not arrive at a conclusion, but agreed that this should be an area of concern.

Health effects of indoor air pollution vs. outdoor air pollution

By gender Indoor air pollution is ...



Q.7

Regarding its effect on your health, do you think indoor air pollution is less harmful, more harmful, or has the same effect as outdoor air pollution? (n=1,213)

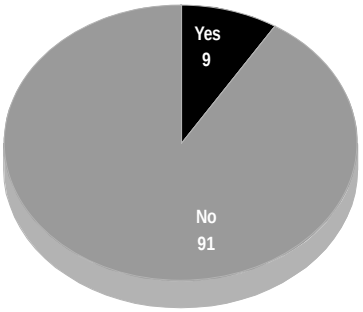
6.2 Receipt of Advice Regarding Effect of Air Pollution on Health

Only one in ten Canadians have received advice from a doctor regarding the effect of air pollution on their health. The most frequently mentioned forms of such advice include instructions to stop smoking or avoid second-hand smoke and to stay indoors or curtail their activities.

It would seem that Canadians are not currently receiving a lot of advice about the possible effects of air pollution on their health from their doctors. Only one in ten (9%) report receiving such advice; 91 percent have never received advice on this subject from their doctor. Similarly, very few focus group participants said they had ever talked with their doctor about the relationship between air pollution and their health.

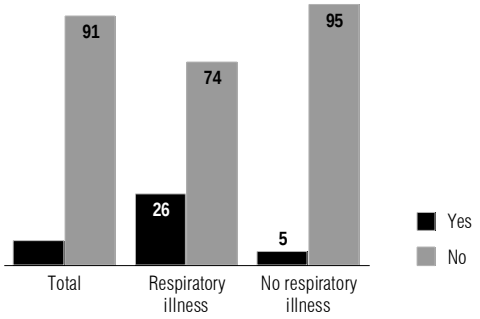
It is not surprising to find that Canadians with respiratory illnesses are five times as likely as those without respiratory illnesses to have received advice from their doctor regarding the effect of air pollution on their health (26% vs. 5%). Similarly, those Canadians who are more concerned about air quality, those who think that air pollution affects health a great deal, and those who think that air pollution has become worse in their community are more likely than others to have received advice in this area from their doctor. Given their higher levels of concern and more negative outlook, these groups may have been more likely to initiate discussion on the relationship between health and air pollution with their doctors, and, as a result, are more likely to receive advice in this area.

Received advice from a doctor regarding the effect of air pollution on health



Received advice from a doctor regarding the effect of air pollution on health

By respiratory illness



Q.11
Have you ever received any direct advice from your doctor regarding the effect of air pollution on your health? (n=1,213)

One-quarter (26%) of Canadians who have received advice from their doctor regarding the effects of air pollution on their health say that they were told to quit smoking or to avoid second-hand smoke. Two in ten (20%) say that they were told to stay indoors or to curtail their activities. One in ten or more each report that they were told to move or quit their job due to the air quality (14%), stay away from smoke, dust or fumes (12%) or take medication (10%). Other advice received includes avoiding irritants/ pollutants (8%), buying a filter for the home or furnace (8%), general comments about being aware of danger or taking preventative action (6%), being informed of the dangers of air pollution (5%), wearing a mask (4%) and avoiding metropolitan areas (3%). Two percent cite other advice, while six percent offer no response to the question.

Once again, the demographic differences we observed are only indicative due to a small sample (n=111) for this question. Women are more likely than men to have been told to stay indoors or curtail their activities and to move or quit their job due to air quality.

Canadians with at least some university education are the most likely to have been told to quit smoking or avoid second-hand smoke and to stay indoors or curtail their activities. Those with a college education are more likely to report that they were told to move or quit their job. Those with a high school education are most likely to report being instructed to stay away from smoke/dust/fumes.

While residents of Ontario tend to say that they were told to stay indoors, residents of Manitoba, Saskatchewan and Alberta are much more likely than other Canadians to indicate that the advice they received was to quit smoking or avoid second-hand smoke.

Type of advice received

Q.12
What advice did you receive? Anything else?
Subsample: Respondents who received direct advice from their doctor about the effects of air pollution on their health (n=111)
Multiple responses allowed

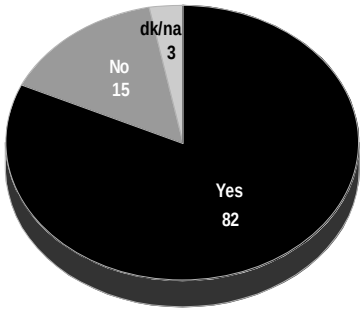
For those who have received advice regarding the effects of air pollution on their health, an overwhelmingly majority suggest that they followed this advice.

Eight in ten Canadians who received direct advice from a doctor about the effects of air pollution on their health (82%) report that they followed this advice; over one in ten (15%) did not follow this advice. Three percent offer no comment about their follow-through on this advice.

More affluent Canadians, Atlantic Canadians, those between 45 and 59 years of age and those from communities of less than 5,000 inhabitants are more likely to indicate that they followed their doctor's advice on this subject. The least educated and less affluent appear to be less likely to have followed this advice.

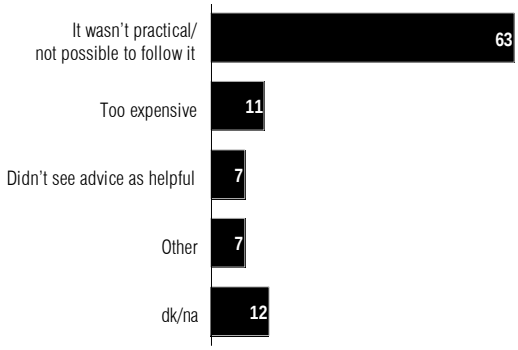
Few respondents (n=18) report that they did not follow this advice. The primary reasons for not following this advice include that it wasn't seen as practical, it was too expensive or it was not seen as being helpful.

Following doctor's advice



Q.13
In general, did you follow the advice that you received?
Subsample: Respondents who received direct advice from their doctor about the effects of air pollution on their health (n=111)

Reason for not following doctor's advice



Q.14
Why didn't you follow your doctor's advice? Any other reasons?
Subsample: Respondents who received direct advice from their doctor about the effects of air pollution on their health and did not follow this advice/dk if they followed this advice (n=18)

To gain further insights into Canadians' views regarding air pollution, we explored their perceptions regarding the air pollution situation in their community and how it may have changed in recent years. We also investigated whether Canadians tend to be more concerned with global or local air pollution problems.

7.1 Air Pollution in the Community

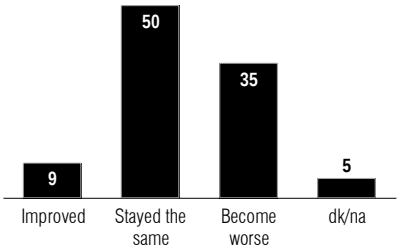
One-half of Canadians believe that the air pollution in their community has remained the same over the last five years; one-third say that the situation has worsened.

Canadians tend to be slightly negative with respect to air pollution in their community. One-half of Canadians (50%) feel that the air pollution in their community has stayed the same in the last five years. Among those that feel the situation has changed, their perceptions tend to be negative. One-third of Canadians (35%) say the air pollution in their community has become worse over the last five years; one in ten (9%) think that it has improved. Five percent offer no response to the question.

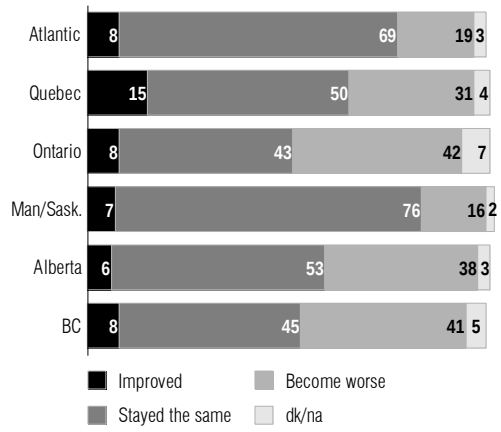
Residents of Manitoba and Saskatchewan (76%) and Atlantic Canadians (69%) are the most likely to say that the level of air pollution has remained constant over the last five years. While Quebecers tend to be relatively more positive about the level of air pollution in their communities (15% improved), residents of Ontario (42% worse) and British Columbia (41% worse) are much more negative about the air pollution situation in their communities.

Those groups that are more likely to believe that the air pollution situation in their area has stayed the same over the last five years include those not concerned about air quality (74%), those who feel that air pollution has little or no effect on health (67%), Canadians from communities with less than 5,000 inhabitants (64%), those aged 16 to 29 years (56%) and those with only a high school education (56%).

Local air pollution situation



Perceptions of local air pollution situation
By region



Q.15
Would you say that the air pollution in your community has improved, stayed the same or become worse in the last five years? (n=1,213)

The most affluent (44%), those from urban centres of over one million inhabitants (43%), those very concerned about air quality (41%) and those who believe that air pollution greatly affects health (40%) are more likely to say that air pollution in their community has become worse over the last five years.

Older Canadians are the most positive about the change in air quality. Over one in ten Canadians 60 years of age or older (15%) think that air pollution in their community has improved in recent years.

While a majority of Canadians feel that pollution has remained stable, the views of the focus group participants, all of whom were drawn from the major

metropolitan areas, were more negative. With only a few exceptions (especially in Vancouver), participants thought that the air quality in their communities had declined, with Toronto participants the most emphatic in this regard. It is interesting to note that a few Toronto participants were optimistic that things would improve in the future. Some Montreal participants believed that consciousness has been raised and that air quality management has improved in the last few years, with more measures in place to manage air pollution. However, they felt that these measures have not been significant enough to substantially improve air quality because of the ever-increasing sources of pollution.

7.2 Local vs. Global Air Pollution Problems

Canadians are more concerned about global problems with the atmosphere resulting from air pollution than air pollution in their community.

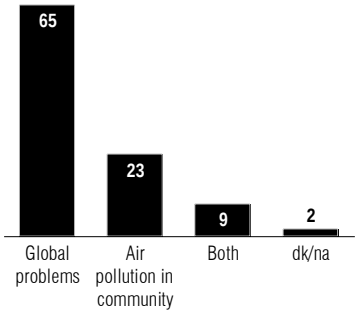
It would seem that Canadians are more anxious about global air problems than they are about local air pollution problems. Two-thirds (65%) report that they are more concerned about possible global problems with the atmosphere resulting from air pollution; one-quarter (23%) are more concerned about the air pollution in their community. One in ten (9%) are equally concerned about both types of air problems. Two percent offer no opinion.

Residents of Manitoba and Saskatchewan (85%), Atlantic Canadians (81%), Albertans (80%), anglophones (73%), those who reside in communities with between 100,000 and one million people (73%), those with a community college education (72%), those who believe that air pollution in their community has remained constant in recent years (72%) and those aged 16 to 29 years (71%) are more concerned about global problems with the atmosphere resulting from air pollution.

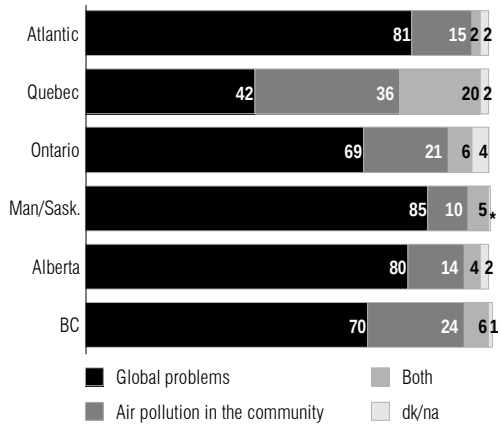
It is interesting to note that those who feel that the quality of air in their community has improved are more likely than those who believe that air pollution has become worse to be concerned about air pollution in their community rather than about global air quality problems. Francophones (37%), Quebecers (36%), Canadians from urban centres of over one million inhabitants (28%) and those with respiratory problems (28%) also tend to be relatively more concerned with air pollution in their community.

Quebecers and francophones (20% each) are the most likely to suggest that they are equally concerned about global and local air pollution problems.

Local vs. global air pollution problems



Local vs. global air pollution problems
By region



* Less than one percent

Q.16
Would you say that you are more concerned about the air pollution in your community or about the possible global problems with the atmosphere resulting from air pollution? (n=1,213)

There are many actors involved in the fight against air pollution, and each could play many different roles and assume varied levels of responsibility. To better understand the mindset of Canadians in this area, we asked them who they felt should play the lead role in this fight. We also examined Canadians' preferences with respect to perceived effectiveness of combating air pollution between government regulation and enforcement on one hand and voluntary action by individuals and companies on the other.

8.1 Leading the Battle Against Air Pollution

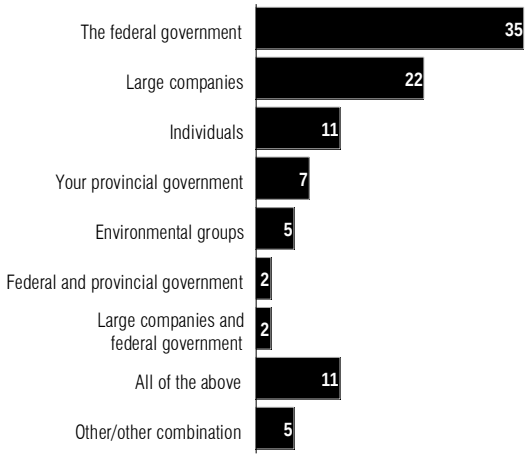
The federal government and large companies are most frequently cited as groups that need to play the lead role in addressing air pollution problems.

In both the survey and in the focus groups, it is clear that Canadians tend to feel that addressing air pollution problems in this country should be primarily a federal government or industry responsibility. While there is a recognition that individuals are contributors to air pollution through personal vehicle emissions or through other actions (or inactions), focus group participants clearly laid responsibility for poor air quality on industrial production and lax government regulation and enforcement. These participants saw a clear link between the responsibility for this situation and the responsibility to effect a solution. As one participant stated:

> *"I think it's the government's responsibility for the citizen's health and safety; that is their responsibility no matter how you look at it."*

Survey participants were presented with a list of five groups (large companies, environmental groups, the federal government, individuals and their provincial government) and asked which group needs to take the lead role to address air pollution problems. One-third of Canadians (35%) say that the federal government should lead these efforts, while two in ten (22%) feel that large companies should take the lead role. Eleven percent say that individuals should be front and centre in fighting this problem. Fewer Canadians suggest that their provincial government (7%) or environmental groups (5%) should take the lead role. Two percent each say that the federal and provincial governments or that large companies and the federal government should be primarily responsible. One in ten (11%) feel that all of these groups should take the lead role. Five percent suggest that other combinations of these groups should be primarily responsible for addressing air pollution problems.

Leading the battle against air pollution



Q.17
Which one of the following groups will need to play the lead role to address air pollution problems? (n=1,213)

Residents of Manitoba and Saskatchewan (48%), British Columbians (43%), university graduates (43%) and more affluent Canadians ($50K-$70K, 43%; $70K+, 41%) tend to prefer that the federal government take the lead role in addressing air pollution problems.

Men (40%) and anglophones (39%) are more likely than women (30%) and francophones (21%) to think that the federal government needs to play a lead role in this area. Women and francophones tend to be more likely than men and anglophones to suggest that a more collaborative approach (i.e., all of the groups we examined playing the lead role) is needed (14% vs. 8%, 16% vs. 10%, respectively). Furthermore, francophones (19%) are more likely than anglophones (8%) to believe that individuals need to lead the fight against air pollution.

Large companies are a more popular choice among Albertans (30%), those who disagree that individuals can take action that will effectively reduce air pollution (30%), Atlantic Canadians (27%) and those who reside in communities of less than 5,000 inhabitants (27%).

While Canadians who do not have respiratory illnesses are more likely than those who have been diagnosed with a respiratory illness to suggest that large companies should have the lead role in fighting air pollution (23% vs. 17%), those with respiratory illnesses are more likely to feel that a collaborative approach (i.e., all of the groups we examined playing the lead role) should be pursued (16% vs. 10%).

It is not surprising to find that Canadians who strongly agree that individuals can take actions to effectively reduce air pollution are much more likely than those who disagree with this statement to feel that individuals should play the lead role in addressing air pollution problems (15% vs. 2%). Those aged 16 to 29 years also place greater importance on individuals leading this battle.

Albertans (14%) are the most likely to suggest that their provincial government should be playing the lead role in this area.

Leading the battle against air pollution
By region

	Atlantic	Quebec	Ontario	Man/Sask.	Alberta	BC
The federal government	42	21	38	48	33	43
Large companies	27	20	21	25	30	19
Individuals	10	19	8	10	7	8
Your provincial government	6	4	7	2	14	8
Environmental groups	6	7	5	3	5	3
Federal and provincial government	1	4	2	2	–	1
Large companies and federal government	2	2	2	2	1	1
All of the above	3	16	12	5	8	11
Other/other combination	2	7	5	2	2	3
None	–	*	–	–	–	1
dk/na	*	–	*	1	–	2

*Less than one percent

Q.17
Which one of the following groups will need to play the lead role to address air pollution problems? (n=1,213)

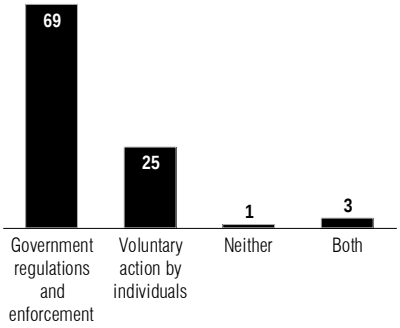
8.2 Voluntary vs. Regulatory Approach to Combatting Air Pollution

Canadians clearly perceive government regulations and enforcement as a more effective approach to combatting air pollution than voluntary action by individuals or companies.

It appears that Canadians put more faith in the government than in either individuals or companies to effectively tackle the air pollution problem. When asked to examine the relative effectiveness of government regulations and enforcement versus voluntary action by individuals, Canadians clearly perceive government regulations and enforcement as the more effective approach. Seven in ten Canadians (69%) feel that government regulation and enforcement is the most effective approach to combat air pollution, while one-quarter (25%) say that voluntary action by individuals is the most effective. The perceived effectiveness of government regulation and enforcement is even greater when it is compared to voluntary action by companies (77% vs. 17%).

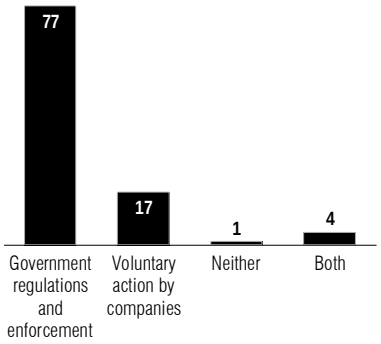
Men are more likely than women to feel that government regulations and enforcement are more effective (74% vs. 65%). Women are relatively more likely than men to suggest that voluntary action by individuals is the most effective way to combat air pollution (28% vs. 22%).

Best method of combatting air pollution: government regulation vs. voluntary action by individuals



Q.18
Some people say that governments are already too involved in the lives of Canadians and that voluntary action by individual citizens is the most effective way to combat air pollution. Other people say that individual citizens tend not to take any real effective action unless they have to, and as a result, government regulation and enforcement is the most effective way to combat air pollution. Which view is closer to your own?
Subsample: Half of the respondents (n=598)

Best method of combatting air pollution: government regulation vs. voluntary action by companies



Q.19
Some people say that governments are already too involved in the activities of industries and that voluntary action by companies is the most effective way to combat air pollution. Other people say that companies tend not to take any real effective action unless they have to, and as a result, government regulation and enforcement is the most effective way to combat air pollution. Which view is closer to your own?
Subsample: Half of the respondents (n=615)

While more affluent Canadians put more faith in the effectiveness of government regulations and enforcement, the least affluent tend to be more likely to say that individual action is the way to go.

Not surprisingly, Canadians who disagree that individuals can take actions that will effectively reduce air pollution (79%) are the most likely to say that government regulations and enforcement is the most effective way to combat air pollution. Other groups more likely to hold this view include university graduates, those who have been diagnosed with a respiratory illness, residents of Ontario and Alberta and those between 30 and 44 years of age. Furthermore, anglophones feel more positively about the effectiveness of government regulations and enforcement than do francophones.

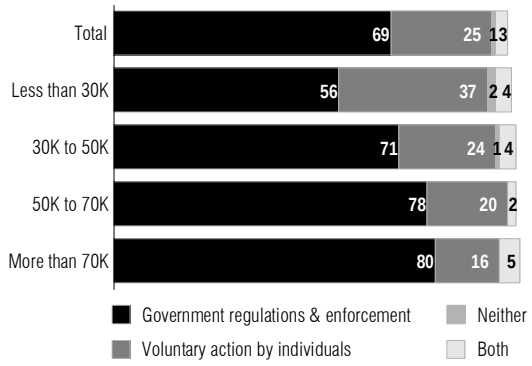
On the other hand, Canadians who reside in communities with between 5,000 and 100,000 people, those aged 16 to 29 years, and residents of British Columbia, as well as Manitoba and Saskatchewan, have relatively more faith in the effectiveness of voluntary action by individuals.

Many of the demographic differences we observed previously also appeared when we examined Canadians' perceptions of the effectiveness of government regulations and enforcement compared to voluntary actions by companies in combating air pollution. However, a few new differences also emerge.

While anglophones are much more likely than francophones to say that government regulations and enforcement are more effective than voluntary action by companies in combatting air pollution (83% vs. 62%), francophones are relatively more positive about the effectiveness of voluntary action by companies than are anglophones (27% vs. 13%).

Best method of combatting air pollution: government regulation vs. voluntary action by individuals

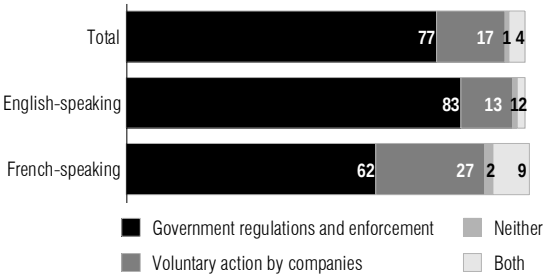
By household income



Q.18
Some people say that governments are already too involved in the lives of Canadians and that voluntary action by individual citizens is the most effective way to combat air pollution. Other people say that individual citizens tend not to take any real effective action unless they have to, and as a result, government regulation and enforcement is the most effective way to combat air pollution. Which view is closer to your own?
Subsample: Half of the respondents (n=598)

Best method of combatting air pollution: government regulation vs. voluntary action by companies

By language



Q.19
Some people say that governments are already too involved in the activities of industries and that voluntary action by companies is the most effective way to combat air pollution. Other people say that companies tend not to take any real effective action unless they have to, and as a result, government regulation and enforcement is the most effective way to combat air pollution. Which view is closer to your own?
Subsample: Half of the respondents (n=615)

Overall, the better educated and the most affluent, residents of Ontario and British Columbia, and those who feel that the air pollution situation in their community has become worse are the most likely to say that government regulations and enforcement is the most effective way to combat air pollution. Voluntary action by companies tends to be seen as more effective by Canadians aged 16 to 29 years, less educated Canadians, Quebecers, Atlantic Canadians and residents of Manitoba and Saskatchewan.

Although voluntary action to reduce air pollution was preferred by the focus group participants, this was not seen as the most effective way to promote change and obtain results. Despite the coercive overtones, participants expressed a strong preference for a regulatory approach to this problem, especially if this approach were to be applied equally to individuals, industries and governments. A number of participants suggested that some sort of combination of voluntary and regulatory approaches would be preferable. Participants in all three locations felt that many good regulations were already in place, but that the enforcement of these regulations was lax or that industry made use of regulatory loopholes that made these regulations ineffective.

"Legislating manufacturers would have the most impact on improving air quality."

"Maybe you can start voluntarily, and if it's not working, go to a regulation system."

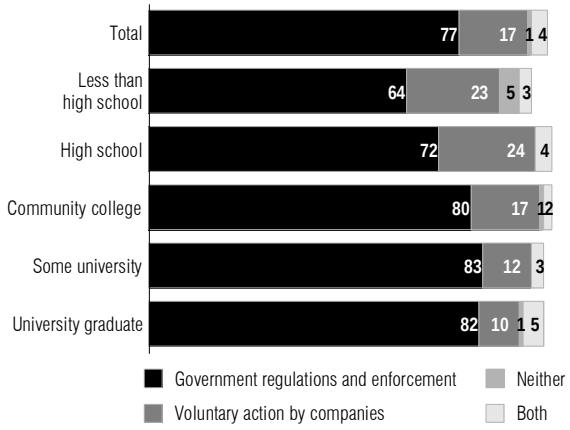
"It {voluntary action} is really not going to happen on the large scale, you know getting compliance on a large scale just isn't going to happen."

"Well, I'd go with a mix of them, but I'm just saying I think you have to have some regulatory."

Participants in both Vancouver and Toronto mentioned vehicle emission tests as one effective regulatory activity that, in their view, was producing positive results without causing the general public undue hardship.

Best method of combatting air pollution: government regulation vs. voluntary action by companies

By education



Q.19
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Subsample: Half of the respondents (n=615)

9.0 Air Quality Index

An effective air quality index that would be used by the general public is an important component of the federal government's outreach activities with respect to air pollution and its possible impacts on the health of Canadians. Therefore, we investigated Canadians' attitudes and experiences with respect to a number of issues related to the air quality index. We examined Canadians' level of familiarity with the index, the frequency with which they currently use the index, the future likelihood of using the index among those not at all familiar with it, Canadians' preferences with respect to the format of air quality messages, the likelihood of a change in behaviour when confronted with an air quality warning, and the exact nature of this possible change in behaviour.

9.1 Familiarity With the Air Quality Index

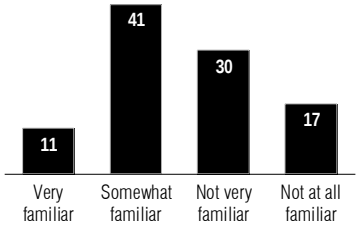
A slight majority of Canadians are at least somewhat familiar with the air quality index.

Canadians are split with respect to their current level of awareness of the air quality index. About one-half (52%) report that they are familiar with the air quality index. However, this familiarity tends to be very soft. Four in ten (41%) say that they are somewhat familiar with this index, while only one in ten (11%) are very familiar with it. Almost one-half of Canadians (47%) are either not very (30%) or not at all familiar (17%) with the air quality index.

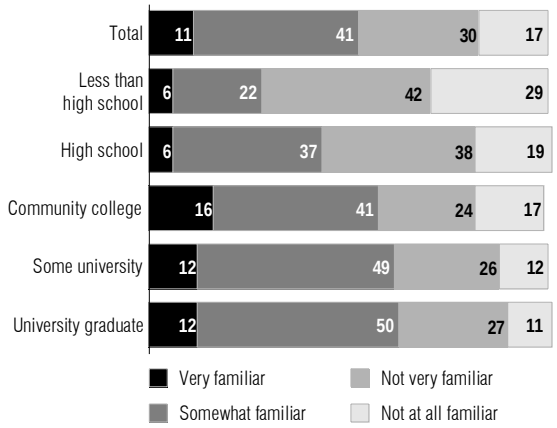
It appears that there is a relationship between educational attainment and familiarity with the air quality index. In general, better educated Canadians are more familiar with the index than less educated Canadians.

Residents of Ontario (64%), the most affluent Canadians (63%) and those between 45 and 59 years of age (57%) are also more familiar with this index than other Canadians. As well, anglophones (55%) are more familiar with the index than are francophones (43%).

Familiarity with the air quality index



Familiarity with the air quality index
By education



Q.20
Would you say that you are very, somewhat, not very, or not at all familiar with the air quality index that is currently distributed in some media sources? (n=1,213)

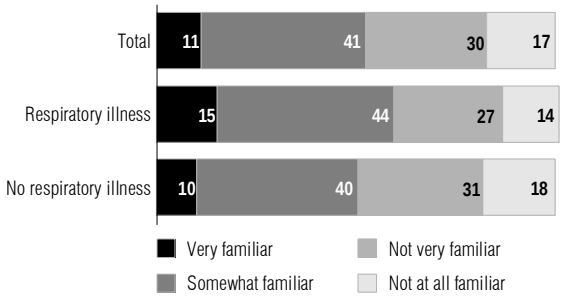
It is worth noting that, while one-half of Canadians without respiratory illnesses (50%) are somewhat (40%) or very familiar (10%) with the air quality index, this proportion increases to six in ten among those with a respiratory illness (59% – 44% somewhat, 15% very familiar). This finding was also reflected in the focus groups, with participants who had respiratory problems or children with respiratory problems being more familiar with the air quality index than those who were not.

It is not surprising to find that those Canadians who are not concerned about air quality and those who feel that air pollution has little to no effect on health are the least familiar with the air quality index (31% and 36%, respectively). They tend to have little interest in air issues and would also likely be less inclined to have an interest in or seek out the air quality index. Residents of Manitoba and Saskatchewan (39%), those who feel that individuals cannot take actions that will effectively reduce air pollution (42%), Quebecers (43%), those aged 16 to 29 years (43%), the least affluent (44%), Atlantic Canadians (45%), those who think that the air pollution situation in their community has remained constant over the last five years (45%) and those from communities of less than 5,000 inhabitants (46%) are also less familiar with this index.

With the exception of Vancouver, the focus group participants had a very low awareness of the existence of an air quality index. Vancouver participants were not only familiar with this index, a number of participants were able to provide a detailed description of the index and the information it provided.

Familiarity with the air quality index

By respiratory illness



Q.20
Would you say that you are very, somewhat, not very, or not at all familiar with the air quality index that is currently distributed in some media sources? (n=1,213)

9.2 Frequency of Use

A plurality of Canadians report occasional use of the air quality index; four in ten have never used it.

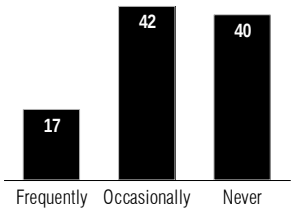
We asked survey respondents who had at least some level of familiarity with the air quality index[6] about their personal use of the index. A plurality (42%) say that they use the index on an occasional basis, while just under two in ten (17%) report using it frequently. Four in ten (40%) have never used the air quality index.

In both the survey and in the focus groups, it is clear that familiarity with the air quality index has an important impact on its use. In general, the more familiar one is with the index, the more one uses it. With regard to the survey results, more than one-half of those who are very familiar with this index (55%) say that they use it frequently. Those who are not very familiar with the index are much more likely to have never used it (66%). Canadians who are only somewhat familiar with the index are more inclined to only be occasional users (55%) of the index.

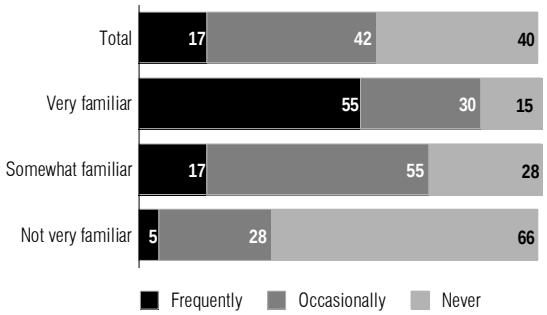
It seems that younger Canadians are less concerned with being informed about the current state of air quality in their community. While Canadians between 45 and 59 years of age (25%) are the most likely to report that they use the air quality index frequently, those between 16 and 29 years of age (49%) are the most likely to have never used this index.

As Canadians' level of concern about the possible health effects of air pollution increases, so too does the frequency of their use of the air quality index. Similarly, frequency of use of the index also increases as concern about air quality increases. Canadians who are less concerned about air quality and the possible health effects of air pollution are the most likely to report that they never use the air quality index. Concern about air quality and its possible effects on health have a clear impact on behaviour.

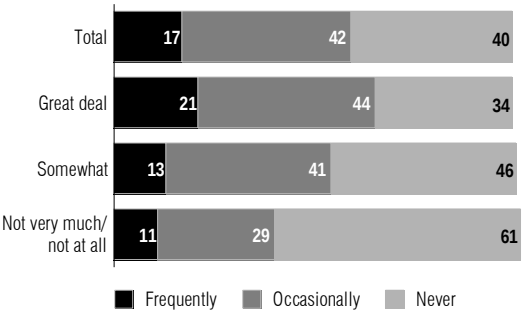
Frequency of use of the air quality index



Frequency of use of the air quality index
By familiarity



Frequency of use of the air quality index
By perceived effect of air pollution on health



Q.21
How often do you personally use the air quality index? Is it ...?
Subsample: Respondents who are very, somewhat or not very familiar with the air quality index (n=984)

6 This included those respondents who are very, somewhat or not very familiar with the air quality index.

Residents of Ontario and those with respiratory illnesses are more likely to be frequent users of the air quality index (24% and 22%, respectively). It is worth noting that Canadians who feel that the air pollution situation in their community has become worse in recent years and those who feel that it has improved are equally likely to be frequent users of the index (25% and 24%, respectively).

The most affluent Canadians (48%), those with respiratory illnesses (48%) and those from urban centres with more than one million inhabitants (47%) are the most likely to report at least occasional use of the air quality index.

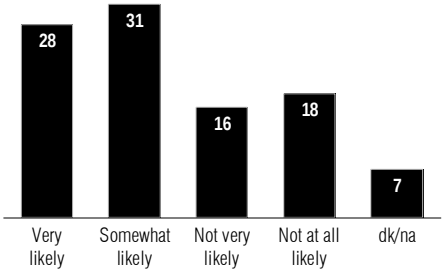
Residents of Manitoba and Saskatchewan (58%), Albertans (56%), Atlantic Canadians (54%) and those from communities of less than 5,000 inhabitants (50%) are the most likely to have never used the air quality index. These are areas where, traditionally, air quality has been less of an issue compared to other more industrialized and populated regions of the country; therefore, the need for an air quality index may not be as great.

It is clear that having a respiratory illness affects the likelihood of use of the air quality index. Canadians with a respiratory illness are much less likely than those who have not been diagnosed with a respiratory illness to have never used the index (30% vs. 43%). These findings are similar to those found in the focus groups. Those participants who suffered from respiratory ailments or who had children who suffered from these ailments are much more likely to use the air quality index than are those who did not.

Six in ten of those who are not at all familiar with the air quality index suggest that they would be at least somewhat likely to use it in the future.

It appears that a number of Canadians who have no current familiarity with the air quality index would use it in the future. Six in ten (59%) say that they would be somewhat (31%) or very likely (28%) to use the air quality index in the future if one existed in their area. One-third (34%) report that they would be not very (16%) or not at all likely (18%) to use it in the future. Seven percent do not offer an opinion on their possible future use of the air quality index.

Possible future use of air quality index



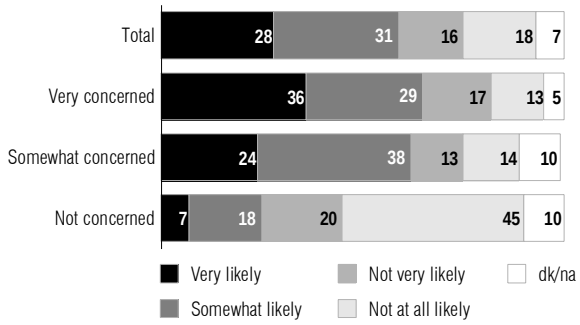
Q.22
In some parts of Canada, air quality indexes inform the public about the level of air pollution in their area. If an air quality index existed in you area, would you say that you would be very, somewhat, not very, or not at all likely to use this index in the future?
Subsample: Respondents who are not at all familiar with the air quality index or dk/na (n=229)

Once again, concern about air quality has an impact on Canadians' attitudes and behaviour relating to air issues. Among those Canadians who are currently not at all familiar with the air quality index, the more concerned they are about air quality in general, the more likely they are to suggest that they would use the air quality index in the future.

Among those Canadians who are currently not at all familiar with the air quality index, those who feel that air pollution has a great deal of effect on health, the more affluent, and those who strongly agree that individuals can take actions to effectively reduce air pollution express are more likely to say they would use this index in the future. In addition, anglophones are more likely than francophones to say that they would use the index in the future if one existed in their area. In general, middle income Canadians, Quebecers, those who feel that air pollution has little to no effect on health and those who disagree that individuals can take actions to effectively reduce air pollution are much less likely to indicate that they would use the index in the future.

Possible future use of air quality index

By concern about air quality



Q.22

In some parts of Canada, air quality indexes inform the public about the level of air pollution in their area. If an air quality index existed in you area, would you say that you would be very, somewhat, not very, or not at all likely to use this index in the future?

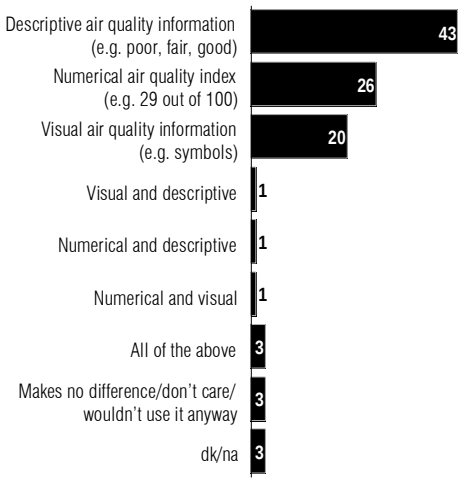
Subsample: Respondents who are not at all familiar with the air quality index or dk/na (n=229)

9.3 Preferred Format of Air Quality Messages

Four in ten Canadians would prefer that air quality messages be delivered as descriptive air quality information.

Respondents were presented with three possible formats (numerical air quality index, descriptive air quality information and visual air quality information) for air quality messages and asked in what format such messages should be delivered. Canadians tend to prefer descriptive air quality information. A plurality of Canadians (43%) feel that air quality messages should be provided descriptively (e.g., poor, fair, good, etc.). One-quarter (26%) prefer a numerical air quality index, while two in ten (20%) say that air quality messages should be provided in a visual format (e.g., symbols). Smaller proportions favour various combinations of two of these formats (visual and descriptive, 1%; numerical and descriptive, 1%; numerical and visual, 1%). Three percent say that all three of these formats should be used to deliver air quality messages. Similar proportions suggest that the format is irrelevant as they would not use them anyway (3%) or do not offer an opinion (3%).

Preferred format of air quality messages



Q.23
In what format should air quality messages be delivered? (n=1,213)
Multiple responses allowed

Descriptive air quality information is a more popular format for air quality messages among residents of Manitoba and Saskatchewan (51%), those who reside in communities with between 100,000 and one million people (51%), Albertans (50%), those with an annual household income between $50,000 and $70,000 (49%) and residents of Ontario (48%). In addition, anglophones (46%) are much more likely than francophones (33%) to prefer descriptive air quality information.

Francophones (32%) are more likely than anglophones (24%) to prefer a numerical air quality index. Those very familiar with the air quality index (32%), those who feel that the air pollution in their community has become worse (31%), Quebecers (31%), the most affluent Canadians (31%), those with at least some university education (31%) and those between 30 and 44 years of age (31%) are also relatively more likely to think that air quality messages should be delivered as a numerical air quality index.

Atlantic Canadians (29%), less educated Canadians (less than high school, 25%; high school, 28%) and those not very familiar with the air quality index (25%) have a greater preference for visual air quality information.

With regard to the air quality index, focus group participants preferred the use of multiple scales to communicate air quality. A numeric scale has the value of providing the quantification of air quality, while a semantic scale (excellent, good, and so on) is seen to be more descriptive. A number of participants volunteered the use of symbols to describe air quality, given that symbols (a sun for a sunny day, rain clouds to describe rain, and so on) are a common feature in weather reporting. It should be noted that no set of air quality symbols, other than the most rudimentary, emerged from the session and there was an admission that this system would be unworkable for radio.

Participants interested in receiving the air quality index or air quality information, especially those who have health problems or children with health problems, would like to have this information diffused as widely as possible and in readily accessible formats. Many participants associated a possible air quality index with the more familiar UV index. Most participants agreed that a combination of scales (numeric and descriptive) would be the ideal way of presenting an air quality index. As one person commented:

> *"I think you need both {a descriptive and numeric scale} to be able to reach people. Having both available is probably a better solution than choosing one or the other."*

Further, many participants would like to see the attachment of a "consequence"[7] to this description, similar to that found with the UV index. As the following comment indicates, the attachment of a "consequence" to the air quality index would improve the perceived utility of the scale.

> *"If it can relate to humans a little more, I mean, the 7 is fine – it's a 7, but if you follow that by saying it will affect people in this way, then it will mean a lot more to me than 7."*

Preferred format of air quality messages
By region

	Atlantic	Quebec	Ontario	Man/Sask.	Alberta	BC
Descriptive air quality information	44	32	48	51	50	42
Numerical air quality index	21	31	24	23	26	28
Visual air quality information	29	24	16	13	17	22
Visual and descriptive	–	1	1	1	3	1
Numerical and descriptive	–	*	2	2	–	1
Numerical and visual	–	1	1	–	–	1
All of the above	*	3	4	1	1	3
Makes no difference	–	7	2	*	2	1
dk/na	6	1	3	8	1	3

*Less than one percent

Q.23
In what format should air quality messages be delivered? (n=1,213)
Multiple responses allowed

7 For example, the UV index usually provides a "consequence" related to the numerical and descriptive data, such as "unprotected skin will burn in an hour." For the AQI, typical consequences might be "children with breathing problems or the elderly should take it easy when outside today," "avoid going outside if at all possible," or "today would be a good day to get outside and enjoy the fresh air."

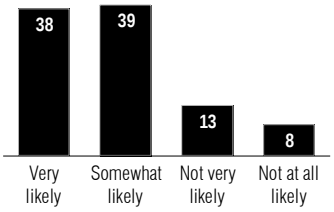
9.4 Reaction to Air Quality Warnings

Three-quarters of Canadians say they or someone in their household would act differently if an air quality warning were issued. The most frequently mentioned reactions to such a warning would be staying indoors, cutting down on the use of personal motor vehicle, and limiting or avoiding strenuous exercise outdoors.

It appears that most Canadians would take action when faced with an air quality warning. Three-quarters of Canadians (77%) report that they or someone in their household would be somewhat (39%) or very likely (38%) to do something differently as a result of an air quality warning. Two in ten (21%) say that it is not very (13%) or not at all likely (8%) that they would do something different. Of note, the proportion of Canadians who are very likely (38%) to do something differently when confronted with an air quality warning is almost five times greater than that who are not at all likely (8%) to do something differently.

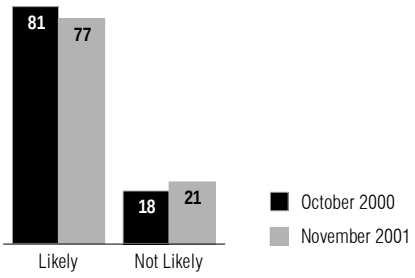
Canadians appear only slightly less likely to change their behaviour as a result of an air quality warning than they were in October 2000 (77% likely vs. 81%).

Likelihood of doing anything different as a result of an air quality warning



Q.24
If an air quality warning was issued how likely would you or someone in your household be to do anything differently as a result? Would that be very, somewhat, not very, or not at all likely? (n=1,213)

Likelihood of doing anything different as a result of an air quality warning



Q.24
If an air quality warning was issued how likely would you or someone in your household be to do anything differently as a result? Would that be very, somewhat, not very, or not at all likely? (n=1,213)
For the November 2001 results, "likely" includes those who said "very" or "somewhat likely", while "not likely" includes those who said "not very" or "not at all likely." For the October 2000 results, "likely" includes those who assigned it a moderate or high likelihood on the 7-point scale used by EKOS; the "not likely" category includes those who assigned it a low likelihood score on the 7-point scale. In general, while the response categories for the two surveys were different, the question wording for the two surveys was virtually identical.

Women appear to be more likely to change their behaviour when faced with an air quality warning than do men. About eight in ten women (82%) say that it is somewhat (40%) or very likely (42%) that they or someone in their household would do something differently as a result of an air quality warning being issued. In comparison, almost three-quarters of men (73%) report that something would be done differently (somewhat likely, 39%; very likely, 34%).

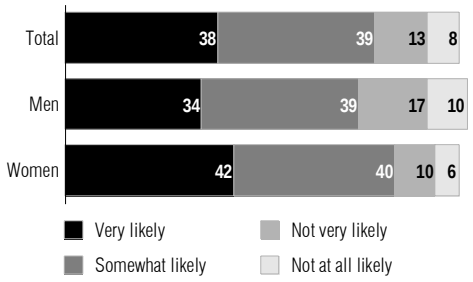
Those who feel that air pollution greatly affects the health of Canadians have very strong attitudes and behaviours on various air-related issues. In this instance, these individuals are much more likely than those who feel that air pollution has less of an effect on health to be very likely to react to an air quality warning. Similarly, those who are very concerned about air quality are more likely than those who are less concerned about air quality to say that they or someone in their household would do anything differently as a result of an air quality warning.

Those who are more inclined to say that a change in behaviour in their household is very likely include Canadians who are very familiar with the air quality index (56%), those with a respiratory illness (49%), those who reside in communities with between 5,000 and 100,000 inhabitants (47%), those who strongly agree that individuals can take action to effectively reduce air pollution (46%), francophones (44%) and Quebecers (44%). It is also interesting to note that Canadians who feel that the air pollution in their community has improved are just as likely as those who say that the air pollution has become worse to indicate that a change in behaviour due to an air quality warning is very likely (45% and 43%, respectively).

Canadians who disagree that individuals can take action to effectively reduce air pollution (35% not very or not at all likely), residents of Manitoba and Saskatchewan (28% not very or not at all likely) and those who say that the air pollution in their community has stayed the same over the last five years (27% not very or not at all likely) are more likely to indicate that a change in behaviour is not likely.

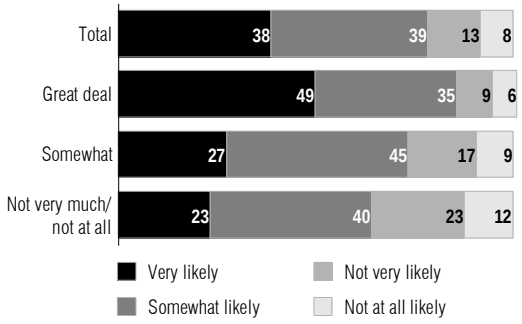
Likelihood of doing anything different as a result of an air quality warning

By gender



Likelihood of doing anything different as a result of an air quality warning

By perceived effect of air pollution on health



Q.24
If an air quality warning was issued how likely would you or someone in your household be to do anything differently as a result? Would that be very, somewhat, not very, or not at all likely? (n=1,213)

In the focus group sessions, those participants who had children with respiratory problems were more likely to act on air quality information than other participants. It is important to note that, even among those with respiratory problems themselves, they would act upon the information after doing their own assessment of the risk posed by air quality. However, as all participants agreed, it is better to have the information than not in these cases.

We asked respondents who suggested that they or someone in their household would be very or somewhat likely to do something different as a result of an air quality warning to describe what would be done differently under such circumstances. The most frequently mentioned reactions to an air quality warning involve staying indoors (34%), cutting down on the use of personal motor vehicle use (15%) and limiting or avoiding strenuous exercise outdoors (13%). Fewer mention that they would avoid the use of any gas-powered equipment (5%), follow suggestions or by-laws (5%), avoid urban areas or cities (4%), use air filters (4%), wear a mask (4%), use public transit (4%) and avoid the use of aerosols or oil-based paints (4%). Three percent say their reaction to an air quality warning would depend on the severity of the situation. Similar proportions suggest that they or someone in their household would close windows or doors (3%), seek more information on air quality (3%), reduce their use of appliances (3%), complain to or lobby government and corporations (2%), reduce wood burning (2%), recycle or practice better waste management habits (2%), or they provided general comments about taking preventative measures or changing their habits (2%). Seven percent offer various other[8] responses to any air quality warning, while three percent would not do anything differently. More than one in ten (13%) have no comment on their household reaction to an air quality warning.

Changes in behaviour in the event of an air quality warning

Stay indoors	34
Cut down on the use of personal motor vehicle	15
Limit or avoid strenuous exercise outdoors	13
Avoid use of any gas-powered equipment	5
Follow suggestions/requirements/by-laws	5
Avoid urban areas/cities	4
Air filters	4
Wear mask	4
Use public transit	4
Avoid use of aerosols, oil-based paints	4
Depends on severity of situation	3
Close window/doors	3
Seek more information on air quality	3
Reduce use of appliances	3
Complain to/lobby government and corporations	2
Reduce wood burning	2
Recycle/better waste management	2
Take preventative measures/change habits	2
Other	7
Nothing would be done different/no change	3
dk/na	13

Q.25
What would be done differently? Anything else?
Subsample: Respondents who/someone in household would be very or somewhat likely to do something different as a result of an air quality warning being issued (n=938)
Multiple responses allowed

8 These "other" responses include such things as don't smoke, use air conditioners, use medication and wear sunscreen.

Anglophones and francophones provide different patterns of response to being confronted with an air quality warning. While anglophones would be more likely to stay indoors (41% vs. 11%) or limit or avoid strenuous exercise outdoors (16% vs. 6%), francophones are more likely to say that they would cut down on their personal vehicle use (21% vs. 13%), avoid using aerosols or oil-based paints (9% vs. 2%), or would not do anything differently (8% vs. 1%).

While those aged 16 to 29 years (22%) are more likely to cut down on their personal motor vehicle use, those between 30 and 44 (21%) are more likely to limit or avoid strenuous exercise outdoors. The most affluent Canadians (25%) and university graduates (24%) also indicate a greater tendency to limit or avoid strenuous exercise outdoors. In addition, men (18%) are more likely than women (10%) to say that they or someone in their household would make this same change in their behaviour as a result of an air quality warning being issued.

Atlantic Canadians (23%, dk/na) are least likely to identify specific changes in behaviour. Residents of the Prairies (20%, dk/na) are also less likely to identify specific actions they would pursue if an air quality warning was issued. Quebecers (21%) are the most likely to cut down on their personal vehicle use, while residents of Ontario are more likely to stay indoors (49%) and limit or avoid strenuous exercise outdoors (21%).

As in the focus groups, Canadians with respiratory illnesses are much more likely than those without such an illness to suggest that they would stay indoors if an air quality warning was issued (50% vs. 29%). Canadians who are more pessimistic about the air pollution situation in their community are also more likely to stay indoors.

Changes in behaviour in the event of an air quality warning
By language

	Total	English-speaking	French-speaking
Stay indoors	34	41	11
Cut down on the use of personal motor vehicle	15	13	21
Limit or avoid strenuous exercise outdoors	13	16	6
Avoid use of aerosols, oil-based paints	4	2	9
Close window/doors	3	4	–
Seek more information on air quality	3	2	6
Nothing would be done different/no change	3	1	8
dk/na	13	14	10

Q.25
What would be done differently? Anything else?
Subsample: Respondents who/someone in household would be very or somewhat likely to do something different as a result of an air quality warning being issued (n=938)
Multiple responses allowed

Industrial/factory and vehicle emissions are seen as the major sources of air pollution.

To gain a deeper appreciation of Canadians' attitudes toward air pollution, we asked them to identify the major sources of air pollution in their community.

A majority of Canadians identify industrial or factory emissions (56%) and vehicle emissions (55%) as major sources of air pollution. One in ten (10%) identify agricultural sources such as stubble burning or methane from cattle, while seven percent cite emissions from power generating plants. Other major sources of air pollution mention include garbage/dump sites (2%), air pollution from the United States (2%), woodstoves (2%), airplanes/airports (2%), cigarettes (2%), small engine emissions (2%), road dust (1%), pesticides/herbicides/chemicals (1%), weather (1%), home heating fuels (1%), natural events such as forest fires or volcanic eruptions (1%), paint, aerosols, spray cans (1%), ground level ozone, loss of the ozone layer (1%), trains, rails (1%) and smog (1%). Four percent cite a variety of other sources. One percent say that there are no major sources of air pollution in their area and seven percent offer no opinion.

Upon closer examination, it appears that most of these sources can be classified into three major categories – industrial, personal or individual,[9] and agricultural. Therefore, overall, about one-quarter of survey respondents (24%) only identify industrial sources of air pollution, while another two in ten (20%) only identify personal sources of air pollution; three percent only identify agricultural sources. Of note, about four in ten (42%) identify sources that fall into more than one of these three major categories or other sources.

Men are more likely than women to cite industrial or factory emissions (59% vs. 53%) and emissions from power generating plants (10% vs. 4%) as a major source of air pollution in their area.

Sources of air pollution

Industrial/factory emissions	56
Vehicle emissions	55
Agricultural sources/stubble burning/livestock/ methane from cattle	10
Emissions from power generating plants	7
Garbage/dump sites	2
Pollution from the U.S.	2
Wood stoves	2
Airplanes/airports	2
Cigarettes/smokers	2
Small engine emissions (e.g. lawn mowers, snow blowers)	2
Road dust	1
Pesticides/herbicides/chemicals	1
Weather	1
Home heating fuels	1
Natural events (e.g. forest fires, volcanic eruptions)	1
Paint/aerosols/spray cans	1
Ozone/ground level ozone/loss of ozone layer	1
Trains/rails/trucks	1
Smog	1
Other	4
None/nothing	1
dk/na	7

Q.27
As far as you know, what are the major sources of air pollution in your area? Any others? (n=1,213)
Mutiple responses allowed

Canadians with an annual household income of more than $70,000 (68%), those with an annual household income between $50,000 and $70,000 (64%), Albertans (64%), university graduates (63%), those between 30 and 44 years of age (63%) and those who feel that air pollution has become worse in their community (62%) are more likely to identify industrial or factory emissions as a major source of air pollution.

9 Sources that fall into this classification are generally things that are used or caused by individuals. They include such things as vehicle emissions, garbage, wood stoves, cigarettes, small engine emissions and home heating fuels.

It is interesting to note that those who feel that air pollution has become worse in their community (64%) are even more likely to view vehicle emissions as a major source of air pollution in their area. Vehicle emissions are also more likely to be seen as a major source of air pollution by British Columbians (68%), those from urban centres of over one million inhabitants (66%), those with at least some university education (64%), residents of Ontario (62%), university graduates (62%) and those with an annual household income between $30,000 and $50,000 (61%).

Residents of Manitoba and Saskatchewan (26%) and those from communities with less than 5,000 residents (21%) are more likely than other Canadians to identify agricultural sources, stubble burning or methane from cattle as a major source of air pollution in their area.

Given that the focus group sessions took place in three metropolitan centres (Montreal, Toronto and Vancouver), it was not surprising that focus group participants also put a very heavy emphasis on vehicle emissions and industry when they discussed the major sources of air pollution in their communities. It was clear from the focus group discussions that participants felt than man-made causes of air pollution are much more problematic than natural causes. However, it was interesting to see that a few residents of Vancouver and Montreal did identify methane from animals as a major source of air pollution (usually in the outlying areas). Meanwhile, Montreal participants were more apt to suggest that a large part of the pollution in Canada comes from the United States.

The battle to reduce air pollution can be fought on many fronts. Governments, industry and individuals can all do their part to help reduce air pollution. It is very challenging to persuade the general population that it is possible for them to take actions in this regard. Before attempting to convince the public to take specific actions, it is helpful to understand Canadians' sense of efficacy in this area, explore why they might feel that individual action is not possible, and identify those actions that they are most willing to undertake to fight air pollution. This chapter presents the results on these key questions.

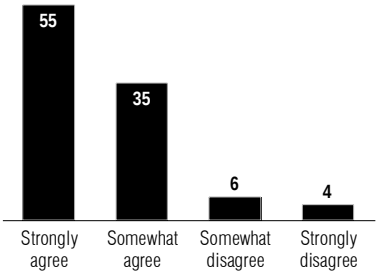
11.1 Perceived Effectiveness of Individual Action

Nine in ten Canadians agree that individuals can take actions that will effectively reduce air pollution. Among those that feel such actions are not possible, a plurality say that even if individuals took action, it wouldn't make any difference.

Even though they tend to think that government regulation and enforcement is a more effective approach to combat air pollution than voluntary action by individuals, Canadians overwhelmingly endorse the view that individuals can take actions that will effectively reduce air pollution. A majority (55%) strongly agree with this assertion while another one-third (35%) somewhat agree. Only one in ten (10%) somewhat (6%) or strongly disagree (4%) that individuals can take actions that will effectively reduce air pollution.

Canadians who think that air pollution affects the health of Canadians a great deal (62%), the least affluent Canadians (62%), those who reside in communities with between 5,000 and 100,000 people (62%), those very concerned about air quality (60%), those with less than a high school education (60%) and Quebecers (60%) are the most likely to strongly agree that individuals can take actions that will effectively reduce air pollution.

Perceived effectiveness of individual action to reduce air pollution



Q.28
Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that individuals can take actions that will effectively reduce air pollution? (n=1,213)

Among those who do not feel that individuals can take actions that would effectively reduce air pollution, two in ten (21%) say that even if individuals took action, it wouldn't make any difference. Approximately one in ten each feel that reducing air pollution is a government task (13%), that it can't be done at the individual level (13%), there is a lack of accountability/interest from public officials (13%), it is too much trouble (12%), it is not possible to take action (11%), or they don't know what to do (9%). Other reasons cited include that reducing air pollution requires organization or knowledge (7%), other sources of air pollution have more impact (6%), comments about the undue influence of corporations (6%), that reducing air pollution is business's responsibility (6%) and that air pollution is not a problem so no action is necessary (2%). Three percent mention a variety of other reasons, while seven percent offer no response.

Given that only 122 people responded to this question, the observed differences among the various demographic subgroups tend to be indicative rather than statistically significant. However, there are a few differences worth noting.

Reason why individuals can't take action to reduce air pollution

Even if they did it wouldn't make any difference/powerlessness	21
Government-scope task	13
Can't be done at the individual level	13
Lack of accountability/interest from public officials	13
Too much trouble/apathetic	12
Not possible to take action (e.g. can't avoid car usage, etc.)	11
Don't know what to do	9
Requires organization/knowledge	7
Other sources of air pollution have more impact	6
Under influence of corporations	6
Business's responsibility	6
Air quality not a problem, no action necessary	2
Other	3
dk/na	7

Q.30
Why can't individuals take action to help reduce air pollution? Any other reasons?
Subsample: Respondents who disagree or dk/na that individuals can take actions to reduce air pollution (n=122)
Multiple responses allowed

Canadians with a respiratory illness are almost four times as likely as those without a respiratory illness to argue that reducing air pollution should be a government task (28% vs. 8%). Those who feel that the air pollution in their community has become worse over the last five years are also more likely to offer this explanation as to why individuals can not take action to help reduce air pollution. Furthermore, women (20%) are much more likely than men (8%) to suggest fighting air pollution should be a government task.

Women are also much more likely than men to say that individuals can't take action because they can't avoid doing those things that cause air pollution (19% vs. 6%). Canadians with less than a high school education (30%) are the most likely to offer this argument.

While francophones (21%) are much more likely than anglophones (6%) to report that they don't know what to do to help reduce air pollution, anglophones (16%) are much more likely than francophones (3%) to argue that reducing air pollution can't be done at the individual level.

High school graduates (39%) and the most affluent (37%) are more likely to say that even if they did take actions to help reduce air pollution, it wouldn't make any difference.

The least affluent Canadians (28%) are the most likely to suggest that individual action to fight air pollution is too much trouble.

In the focus group discussions, it was clear that participants believed that individuals wouldn't take action because of convenience and practicality issues. The feeling was that many people would think that changing their current behaviours would cause disruptions in their current routines that they were not willing or at least resistant to make, even if it would help reduce air pollution. Of secondary importance were feelings that individual action was

not enough or would result in insignificant change and that taking action to reduce air pollution was something that businesses should be doing as they are the major polluters. Furthermore, a few participants suggested that they did not know what action they could take, or that it was just too much trouble and would take too much time and effort.

"It's not practical to, say, stop driving."

"People need more self-awareness around how their own actions actually impact the environment."

"People are inherently lazy."

"Well let's be honest, you know, it's one thing to say hey, these are great ideas . . . it is really not something that I really think is totally practical."

"If just us people in this room stop driving for a week, you're not going to make any difference really because ten more people will find a car and drive."

"Individually, we don't have any power to make a difference."

"I mean, there certainly are alternative energy sources available, but we are definitely not made aware of them. And they are also only available to people who have money."

As one participant in Toronto noted, the mentality that sees individual action as being ineffective is something that needs to be challenged to help build momentum for widespread action by the general public.

"The mentality that one person can't make a difference (is the biggest barrier to individual action) . . . people have just said here what we can do to improve things and, on our own, nobody thinks they can improve it. Well, it all starts with one person, right? And if we were all to do that, then it would work. But it's got to start with one; you don't have to have a whole group. One turns into a group, is what I'm trying to say."

11.2 Actions to Combat Air Pollution

Reducing personal vehicle use and taking alternative methods of transportation such as public transport or carpooling to work, are the most frequently mentioned activities that individuals can do to reduce air pollution.

We asked those respondents who felt that individuals could take actions to effectively reduce air pollution what actions individuals could pursue, and it is clear that altering the use of their personal motor vehicle is the most frequently mentioned top-of-mind solution. Four in ten (42%) spontaneously mention reducing personal vehicle use, while another one-third (34%) mention taking alternative methods of transportation such as public transport or carpooling to work. More than one in ten each suggest that individuals could lobby government for stricter laws (14%) or choose a more fuel-efficient car (11%). Other possible individual actions include recycling/composting or other waste disposal practices (9%), learning more about efficient driving habits (8%), stop smoking (7%), less wood or other burning (6%), using cleaner energy sources or alternative heating (6%), become more educated about the subject or change their mindset (6%), reduce use of solvents, paint thinners (6%), support or join an environmental group (5%), limit the use of gas lawn mowers, leaf blowers or snow blowers (3%), use less chemicals or pesticides (3%) and reduce the use of air conditioning (3%). One in ten (12%) provide a variety of other[10] possible actions. Four percent offer no opinion.

Individual actions to reduce air pollution

Reduce your personal use of your personal vehicle	42
Take alternative methods of transportation, such as public transport or carpooling to work	34
Lobby government for stricter laws/apply laws	14
Choose a more fuel efficient car	11
Recycle/compost/waste disposal	9
Learn more about efficient driving habits	8
Smoking cessation	7
Burn less wood/no burning (general)	6
Cleaner source and use of energy/alternative heating	6
Educate/change mindset	6
Reduce use of solvents, paint thinners	6
Support or join an environmental group	5
Limit your use of gas lawn mowers, leaf blowers or snow blowers	3
Use less chemicals/pesticides	3
Reduce the use of air conditioning	3
Other	12
None/nothing	*
dk/na	4

Q.29
What can individuals do to reduce air pollution? Anything else?
Subsample: Respondents who agree that individuals can take actions to reduce air pollution (n=1,091)
Multiple responses allowed

Regionally, we find that Atlantic Canadians are more likely to suggest that individuals can reduce their personal vehicle use (50%) and do less burning of wood and other materials (12%) to reduce air pollution. While Quebecers (28%) are more likely than other Canadians to suggest that individuals can choose a more fuel-efficient car, residents of Ontario (41%) are the most likely to say that individuals can take alternative methods of transportation to work to reduce air pollution. Residents of Alberta tend to place a greater emphasis on reducing personal vehicle use (61%) and lobbying the government for stricter laws (25%). British Columbians (51%) also see reducing personal vehicle use as an action that individuals can take to reduce air pollution. Furthermore, British Columbians are relatively more likely to identify burning less wood and other materials (16%) and learning more about efficient driving habits (15%) as possible individual actions that could be pursued.

10 Each of these "other" possible actions is mentioned by less than three percent of survey respondents. "Other" responses include such things as use environmentally-friendly products, waste disposal, don't support polluting companies, use less energy or electricity, plant trees, and pay higher taxes to support action against air pollution.

Anglophones and francophones have many differences of opinion regarding possible actions that individuals can take to reduce air pollution. Anglophones are more likely than francophones to identify the following actions: reducing personal vehicle use (47% vs. 27%), taking alternative methods of transportation to work (38% vs. 24%), lobbying government for stricter laws (17% vs. 5%), stopping smoking (9% vs. 1%) and burning less wood or other materials (8% vs. 1%). Francophones (28%) are five times as likely as anglophones (5%) to argue that individuals can choose a more fuel-efficient car to reduce air pollution.

Canadians with respiratory illnesses are more likely than those without such illnesses to suggest that cutting down on driving (reducing personal vehicle use, 46% vs. 41%; taking alternative methods of transportation to work, 42% vs. 32%) and lobbying government for stricter laws (19% vs. 13%) are actions that individuals could pursue. Choosing a more fuel-efficient car is a more popular approach for those Canadians who have not been diagnosed with a respiratory illness than those who have been diagnosed with a respiratory illness (12% vs. 7%).

Reducing personal vehicle use is also more likely to be identified as an activity that individuals could pursue to reduce air pollution by those aged 16 to 29 years (47%) and the most affluent Canadians (47%). Those aged 16 to 29 years (44%), those with a household income between $50,000 and $70,000 (41%), those who feel that air pollution in their community has become worse in recent years (40%), those who reside in communities between 100,000 and one million people (40%) and university students and graduates (39%) place greater emphasis on taking alternative methods of transportation to work. In addition, women (38%) are more likely than men (30%) to identify this individual approach to reducing air pollution.

Canadians with at least some university education (26%), the most affluent (21%) and older Canadians (19%) are more likely to view lobbying the government for stricter laws as a method by which individuals can reduce air pollution.

Individual actions to reduce air pollution
By language

	Total	English-speaking	French-speaking
Reduce your personal use of your personal vehicle	42	47	27
Take alternative methods of transportation, such as public transport or carpooling to work	34	38	24
Lobby government for stricter laws/apply laws	14	17	5
Choose a more fuel efficient car	11	5	28
Recycle/compost/waste disposal	9	11	6
Learn more about efficient driving habits	8	9	4
Smoking cessation	7	9	1
Burn less wood/no burning (general)	6	8	1
Cleaner source and use of energy/alternative heating	6	7	2
Educate/change mindset	6	7	3
Support or join an environmental group	5	4	8
Other	27	27	24
dk/na	4	3	7

Q.29
What can individuals do to reduce air pollution? Anything else?
Subsample: Respondents who agree that individuals can take actions to reduce air pollution (n=1,091)
Multiple responses allowed

In general, focus group participants identified similar actions to those mentioned in the quantitative survey. However, keeping in mind the smaller numbers, focus group participants did seem to mention the idea of planting trees or having indoor plants more often than survey respondents.

11.3 Likelihood of Taking Various Actions to Combat Air Pollution

Canadians are most willing to choose a more fuel-efficient car, learn more about efficient driving habits and take alternative methods of transportation to work to combat air pollution. They are least willing to pay more for gasoline or other non-renewable fuels, pay higher taxes to support action against air pollution and support or join an environmental group.

Canadians' likelihood of taking action to help combat air pollution varies considerably depending on the possible action. In general, they appear more willing to undertake those activities that are less inconvenient and are less likely to result in them spending more money. More than eight in ten say they are very or somewhat likely to choose a more fuel-efficient car (63% very likely, 24% somewhat likely) and learn more about efficient driving habits (52% very likely, 29% somewhat likely) to help combat air pollution. About three-quarters are likely to take alternative methods of transportation, such as public transit or carpooling, to work (50% very likely, 23% somewhat likely) and limit their use of gas lawn mowers, leaf blowers or snow blowers (44% very likely, 28% somewhat likely). Two-thirds (66%) report that they are very (37%) or somewhat likely (29%) to reduce their use of air conditioning to help combat air pollution.

Less than one-half of Canadians are willing to pay more for gasoline or other non-renewable fuels (18% very likely, 30% somewhat likely), support or join an environmental group (20% very likely, 26% somewhat likely) and pay higher taxes to support action against air pollution (15% very likely, 31% somewhat likely). Of note, at least one-quarter say

Likelihood of undertaking various measures to reduce air pollution

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	63	24	6	4	2	*
Learn more about efficient driving habits	52	29	8	6	3	2
Take alternative methods of transportation, such as public transit or carpooling, to work	50	23	8	10	9	*
Limit your use of gas lawn mowers, leaf blowers, snow blowers	44	28	9	8	11	*
Reduce the use of air conditioning	37	29	10	8	15	1
Support or join an environmental group	20	26	26	26	1	*
Pay more for gasoline or other non-renewable fuels	18	30	23	25	3	2
Pay higher taxes to support action against air pollution	15	31	24	29	*	*

*Less than one percent

Q.31a-b

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

they are not at all likely to undertake these three activities (pay higher taxes to support action against air pollution, 29%; support or join an environmental group, 26%; pay more for gasoline or other non-renewable fuels, 25%).

There are a number of interesting differences among the various age groups with respect to their level of likelihood to undertake some of these activities. Those between 16 and 29 years of age express a greater willingness to take alternative methods of transportation and reduce their use of air conditioning; they are less likely to pay more for gasoline. Those between 30 and 44 years of age are more likely to say they would take alternative methods of transportation, learn more about efficient driving habits, reduce their use of air conditioning, and limit their use of gas lawn mowers, leaf blowers or snow blowers. Canadians between 45 and 59 years of age display a greater willingness to choose a more fuel-efficient car, limit their use of small gas-powered engines, and pay higher taxes to support action against air pollution. Older Canadians are much less likely to be involved in activities that might help combat air pollution. In particular, they are less likely to choose a more fuel-efficient car, learn more about efficient driving habits, join or support an environmental group, reduce their use of air conditioning, and limit their use of gas lawn mowers, leaf blowers, or snow blowers. However, they are more inclined to say that they would be very likely to pay higher taxes to support action against air pollution.

There appears to be a relationship between willingness to undertake actions to help combat air pollution and educational attainment. In general, the most educated express a higher level of willingness to participate in a number of these activities. University graduates are more inclined to say that they would be very likely to choose a more fuel-efficient car (68%), limit their use of small gas-powered equipment (51%), reduce the use of air conditioning (41%), pay more for gasoline or other non-renewable fuels (24%), and pay higher taxes to support action against air pollution (21%).

However, it appears that in this instance, affluence does not have the same effect on behaviour that education does. There is no clear pattern or relationship between likelihood of taking action to reduce air pollution and income level. However, there are some differences between the various income groups. The least affluent are the most likely

Likelihood of undertaking various measures to reduce air pollution

By age Somewhat or very likely

	TOTAL	16 TO 29	30 TO 44	45 TO 59	60 OR MORE
Choose a more fuel efficient car	87	89	90	91	75
Learn more about efficient driving habits	81	83	87	84	69
Take alternative methods of transportation, such as public transit or carpooling to work	73	82	79	71	58
Limit your use of gas lawn mowers, leaf blowers, snow blowers	72	74	77	77	55
Reduce the use of air conditioning	66	74	72	62	55
Support or join an environmental group	46	45	48	47	43
Pay more for gasoline or other non-renewable fuels	48	44	51	49	45
Pay higher taxes to support action against air pollution	46	45	44	52	49

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

to suggest that they would take alternative methods of transportation (59% very likely), learn more about efficient driving habits (57% very likely), and support or join an environmental group (30% very likely). Those with an annual household income between $30,000 and $50,000 are less likely than other income groups to support or join an environmental group (31% not at all likely) and limit their use of gas lawn mowers, leaf blowers or snow blowers (22% not very or not at all likely) to help combat air pollution. More affluent Canadians are more willing to pay higher taxes to support action against air pollution ($50K-$70K, 55% somewhat or very likely; $70K+, 51% somewhat or very likely). The most affluent are also more likely to be willing reduce their use of air conditioning (74% somewhat or very likely). While those with an annual household income between $50,000 and $70,000 are more likely to limit their use of small gas-powered engines (78% somewhat or very likely); they are less likely to join or support an environmental group (61% not very or not at all likely).

While Atlantic Canadians are more likely to pay more for gasoline or other non-renewable fuels (53% somewhat or very likely), pay higher taxes to support action against air pollution (53% somewhat or very likely), and support or join an environmental group (51% somewhat or very likely), they are less likely to take alternative methods of transportation to work (24% not very or not at all likely) and reduce their use of air conditioning (30% not at all likely). Quebecers are more likely to choose a more fuel-efficient car (72% very likely), take alternative methods of transportation to work (65% very likely), reduce their use of air conditioning (43% very likely), support or join an environmental group (27% very likely); they are less likely to pay higher taxes to support action against air pollution (65% not very or not at all likely) and limit their use of gas-powered equipment (26% not very or not at all likely). Quebecers appear to have strong and conflicting opinions with respect to paying more for gasoline or other non-renewable fuels to help combat air pollution. Quebecers are simultaneously the most likely of all Canadians to report that they are very likely (23%) and not at all likely (30%) to undertake this activity.

Residents of Ontario (53% somewhat or very likely) are more likely to say that they would pay higher taxes to support action against air pollution. On the other hand, they are less likely than other Canadians to say they would be willing to reduce their use of air conditioning (25% not very or not at all likely). Residents of Manitoba and Saskatchewan are less inclined to pay more for gasoline and other non-renewable fuels (53% not very or not at all likely) and to limit their use of gas-powered equipment (23% not very or not at all likely). While Albertans are more likely to reduce the use of air conditioning (73% somewhat or very likely), they are less likely to support or join an environmental group (67% not very or not at all likely) and learn more about efficient driving habits (19% not very or not at all likely). British Columbians are also less inclined to say that they would learn more about efficient driving habits (22% not very or not at all likely) to help combat air pollution. Residents of British Columbia are more likely than others to say that they would limit their use of gas lawn mowers, leaf blowers or snow blowers (80% somewhat or very likely) and support or join an environmental group (52% somewhat or very likely).

With the exception of putting a limit on their use of gas lawn mowers, leaf blowers, or snow blowers, paying more for gasoline, and paying higher taxes to support action against air pollution, francophones are more inclined than anglophones to say they would be very likely to undertake these activities to help combat air pollution.

There are some notable differences between Canadians from different community sizes regarding their willingness to participate in certain activities to reduce air pollution. Canadians from the largest communities are more likely to take alternate methods of transportation to work and reduce their use of air conditioning. While those who live in communities with between 100,000 and one million inhabitants are more likely to reduce their use of air conditioning, they are less likely to support or join an environmental group. Canadians from the smallest communities appear to be less willing to undertake many of these activities, most notably, taking alternative methods of transportation to work, choosing a more fuel-efficient car, paying more for gasoline or other non-renewable fuels, and paying higher taxes to support action against air pollution.

Overall, Canadians who are more concerned about air quality, who feel that air pollution affects health a great deal, who feel that air pollution in their community has become worse, and who suffer from respiratory illnesses tend to be more likely to undertake these activities to help combat air pollution. Once again, concern about the possible effects of air pollution on health has an impact on the actions that some Canadians are willing to take to help deal with air pollution.

Not surprisingly, Canadians who strongly agree that individuals can take actions to effectively reduce air pollution are more likely than those who have less confidence in individual actions to say that they would be likely to participate in these activities to reduce air pollution. While only three in ten of those who disagree that individuals can take action to effectively reduce air pollution (29%) report that they are very likely to limit their use of gas lawn mowers, leaf blowers or snow blowers, this proportion increases to one-half among those who strongly agree that individual action can be effective (50%).

Likelihood of undertaking various measures to reduce air pollution
By community size

	1 MILLION +		100 K TO 1 MILLION		5K TO 100K		LESS THAN 5K	
	LIKELY	NOT LIKELY	LIKELY	NOT LIKELY	LIKELY	NOT LIKELY	LIKELY	NOT LIKELY
Take alternative methods of transportation to work	80	15	72	18	69	20	65	20
Choose a more fuel efficient car	90	7	87	11	85	12	84	15
Learn more about efficient driving habits	81	12	85	12	78	16	80	17
Reduce the use of air conditioning	71	18	71	17	64	16	55	19
Support or join an environmental group	49	49	41	57	48	50	45	54
Limit your use of gas lawn mowers, leaf blowers, snow blowers	73	15	72	16	70	19	69	21
Pay more for gasoline or other non-renewable fuels	50	46	46	48	47	46	45	53
Pay higher taxes to support action against air pollution	50	51	49	50	48	50	37	62

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

The key to an effective communications or awareness campaign is to take into account the target audience's current communication habits and preferences. To aid in future outreach activities, we examined Canadians' current sources of air pollution information, the frequency with which they search for this type of information, their preferences regarding its availability, their information needs, and the perceived credibility of various sources of information about this subject.

12.1 Frequency of Looking for Air Pollution Information

A plurality of Canadians occasionally looks for information on smog or levels of air pollution in their area.

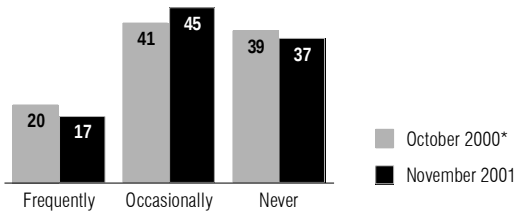
More than four in ten Canadians (45%) say that they look for information on smog or levels of air pollution in their area at least occasionally. Almost two in ten (17%) report that they frequently look for such information. Thirty-seven percent have never looked for this type of information. While Canadians are just as likely to have looked for air pollution information than they were at this time last year (62% vs. 61%), it appears that they do it slightly less often (frequently, 17% vs. 20%; occasionally, 45% vs. 41%).

It appears that as Canadians get older, the frequency with which they look for information on smog or levels of air pollution in their area also increases. While only one in ten between 16 and 29 years of age (10%) report that they frequently look for this type of information, this proportion increases to almost one-quarter of those 60 years of age or older (23%). Those between 16 and 29 years of age (46%) are more likely to say that they have never looked for such information. Those between 30 and 44 years of age (51%) are more likely to have looked for smog or air pollution information on an occasional basis.

Residents of Ontario (25%), those Canadians who feel that the air pollution situation in their community has become worse in recent years (25%), those who feel that the environment has the biggest impact on health (23%) and those who feel that air pollution greatly affects the health of Canadians (23%) tend to be the most frequent seekers of air pollution information. Furthermore, it seems that as the level of concern about air quality increases, so too does the frequency of looking for this information.

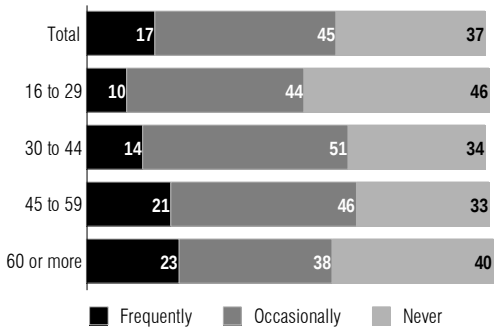
Those who report that air pollution in their community has improved and the most affluent Canadians tend to be more likely to look for air pollution information at least occasionally (54% and 51%, respectively).

Frequency of looking for air pollution information



Q.32
How often do you personally look for information on smog or levels of air pollution in your area? Would that be frequently, occasionally or never? (n=1,213)
**The October 2000 results are based on an EKOS Research Associates' survey that used the exact same question wording.*

Frequency of looking for air pollution information
By age



Q.32
How often do you personally look for information on smog or levels of air pollution in your area? Would that be frequently, occasionally or never? (n=1,213)

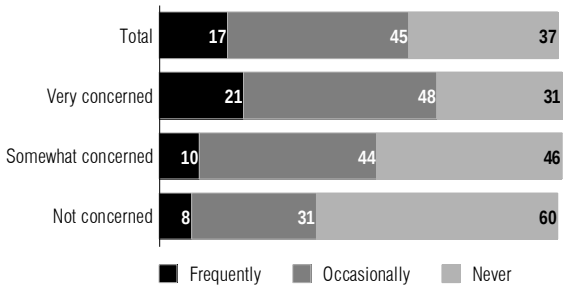
Canadians who are not concerned about air quality (60%), residents of Manitoba and Saskatchewan (59%), Atlantic Canadians (52%), those who feel that air pollution has little to no effect on health (56%), those from smaller communities (46%), and those who think that the air pollution situation in their community has remained constant over the last five years (46%) are the most likely to report that they have never looked for information on smog or levels of air pollution in their area.

12.2 Sources of Air Pollution Information

Newspapers, TV news and the Internet are the most frequently mentioned sources of air pollution information.

One-third or more identify newspapers (35%), TV news (35%) or the Internet (31%) as their main sources of information about air pollution. Two in ten (21%) mention the Weather Network while another two in ten (17%) cite radio news. Fewer Canadians mention environmental or health programs on TV (8%), Environment Canada (5%), the library (4%), an environmental group or association (2%), word of mouth (2%), their provincial government (2%), general comments about TV and radio (2%), environmental or health programs on the radio (2%) and magazines or journals (2%) as their major source of air pollution information. Slightly less than one in ten (8%) identify a variety of other[11] sources. One percent report no major sources of air pollution information, while four percent offer no response.

Frequency of looking for air pollution information
By concern about air quality



Q.32
How often do you personally look for information on smog or levels of air pollution in your area? Would that be frequently, occasionally or never? (n=1,213)

Sources of air pollution information

Newspapers	35
TV news	35
Websites/Internet	31
Weather Network	21
Radio news	17
Environmental/health programs on TV	8
Environment Canada	5
Library	4
Environmental group or association	2
Word of mouth (friends, colleagues)	2
Provincial government	2
TV/radio	2
Environmental/health programs on radio	2
Magazines/journals	2
Other	8
None/nothing	1
dk/na	4

Q.33
If you were to look for information about air pollution, what would be your main sources of information? Any other sources? (n=1,213)
Multiple responses allowed

11 These "other" responses include newsletters, pamphlets, brochures, school, doctors, Health Canada and books.

A number of interesting language differences exist with respect to sources of information about air pollution. While anglophones place a greater reliance on newspapers (41% vs. 19%), TV news (38% vs. 25%), the Internet (33% vs. 25%), the Weather Network (23% vs. 12%) and radio news (21% vs. 5%) than do francophones, francophones are more likely than anglophones to report that they would look for this information from environmental or health programs on TV (21% vs. 3%) and from Environment Canada (10% vs. 4%).

Newspapers are a popular source of air pollution information among British Columbians (52%), the most affluent (43%), those with a college education (42%), university graduates (41%), those between 45 and 59 years of age (41%), those who report that air pollution in their community has become worse (41%) and residents of Ontario (40%). Residents of Ontario (42%) also report a preference for TV news as a main source for this information.

Canadians between 16 and 29 years of age (54%), the better educated (university graduates, 40%; some university, 37%) and the more affluent ($50K – $70K, 40%; $70K+, 36%) report a greater reliance on the Internet for air pollution information.

The Weather Network is more likely to be seen as a main source of information by those with some university education (27%), Atlantic Canadians (25%), the most affluent (23%), residents of Manitoba and Saskatchewan (22%) and residents of Ontario (22%). Quebecers (22%) are much more likely than others to identify environmental or health programs on TV as a primary information source.

Source of air pollution information
By language

	TOTAL	ENGLISH-SPEAKING	FRENCH-SPEAKING
Newspapers	35	41	19
TV news	35	38	25
Websites/Internet	31	33	25
Weather Network	21	23	12
Radio news	17	21	5
Environmental/health programs on TV	8	3	21
Environment Canada	5	4	10

Q.33
If you were to look for information about air pollution, what would be your main sources of information? Any other sources? (n=1,213)
Multiple responses allowed

Those with respiratory illnesses are more likely than those without respiratory illnesses to suggest that they would obtain air pollution information from TV news (40% vs. 33%) and the Internet (40% vs. 29%).

In the focus group sessions, many participants stated that they used the Weather Channel or its francophone equivalent, MétéoMédia, for their weather and air quality information sources. Other frequently mentioned sources include the weather section in newspapers, the Internet and broadcast weather reports.

12.3 Availability of Air Pollution Information

Canadians prefer to have air pollution information all the time rather than only when there is an air pollution problem.

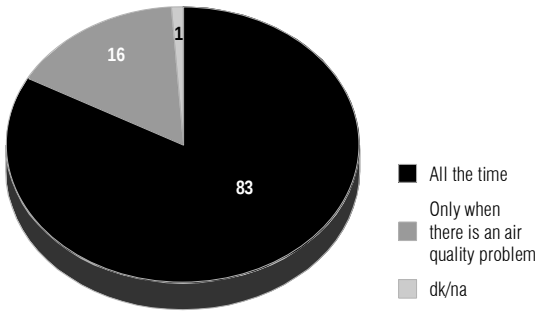
In both the survey and in the focus groups, Canadians expressed a clear desire to have air pollution information at their disposal regardless of the air quality conditions. More than eight in ten (83%) think that air pollution information should be provided all the time; less than two in ten (16%) feel that it should only be provided when there is a problem with air pollution.

Survey results indicate that the greater the concern and the greater the perceived effect on health, the stronger the desire to have air pollution information constantly available. Canadians who suggest that air pollution has a great deal of effect on health (90%), Quebecers (89%), francophones (89%), those very concerned about air quality (88%) and the least affluent (88%) prefer to have air pollution information provided to them all the time.

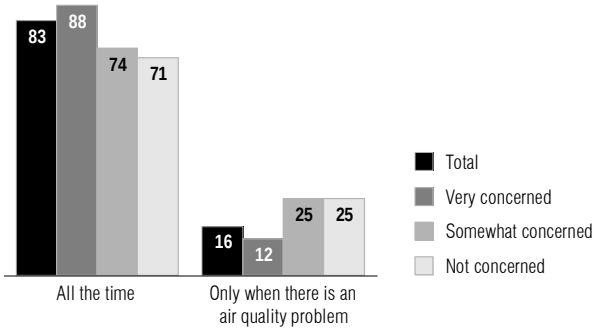
Canadians who are not concerned or only somewhat concerned about air quality (25% each), residents of Manitoba and Saskatchewan (24%), Atlantic Canadians (23%) and those who feel that air pollution has only somewhat or little to no effect on health (23% each) are more likely to say that Canadians should only be provided with air pollution information when there is an air pollution problem.

In the focus group sessions, participants thought that governments and the media should make additional efforts to inform the public when air quality poses a danger to them, but that this activity should not take the place of regularly available air quality information.

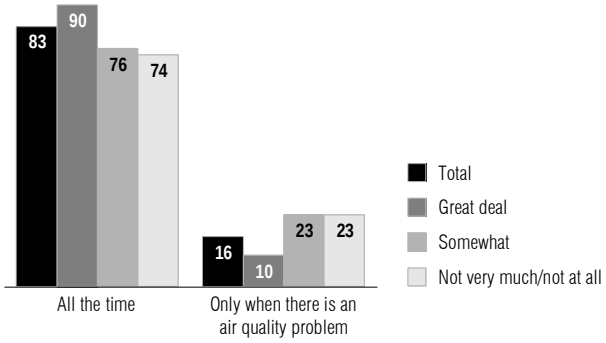
Desired availability of air pollution information



Desired availability of air pollution information
By concern about air quality



Desired availability of air pollution information
By perceived effect of air pollution on health



Q.34
Do you think that air pollution information should be provided to Canadians all the time or only when there is an air pollution problem? (n=1,213)

12.4 Information Preferences

Canadians feel that information regarding the human health effects of air pollution and what individuals can do to reduce air pollution is the most useful.

When presented with a list of various kinds of air pollution information, more than eight in ten Canadians feel that each type of information is somewhat or very useful and majorities say that each type of information is very useful. Canadians provide positive assessments on information related to the human health effects of air pollution (72% very useful, 21% somewhat useful), what individuals can do to reduce air pollution (66% very, 28% somewhat), the types of pollutants causing poor air quality (64% very, 29% somewhat), what individuals can do to limit personal exposure to air pollution (62% very, 29% somewhat), and a forecast of how long an air pollution episode is expected to last (62% very, 27% somewhat). Nearly six in ten (57%) say that the air quality index or level of pollution for the day would be very useful information, with another one-third (32%) saying that this information would be at least somewhat useful. While, overall, a clear majority of Canadians (86%) think that information regarding what governments are doing to address air pollution would be useful, Canadians are the least likely to think that this type of information is very useful (53%).

As noted earlier, the focus group participants wanted to understand the possible human health impacts of poor air quality as part of the air quality index.

Information preferences

	Very Useful	Somewhat useful	Not very useful	Not at all useful	DK/NA
The human health effects of air pollution	72	21	4	2	1
What individuals can do to reduce air pollution	66	28	3	2	1
The types of pollutants causing poor air quality	64	29	4	3	1
What individuals can do to limit personal exposure to air pollution	62	29	5	3	1
A forecast of how long an air pollution episode is expected to last	62	27	5	4	1
The air quality index or level of pollution for that day	57	32	7	4	1
What governments are doing to address air pollution	53	33	8	4	2

Q.35a-g

Please tell me if the following information about air pollution would be very, somewhat, not very or not at all useful for you to know? How about ... The human health effects of air pollution ... What individuals can do to reduce air pollution ... What individuals can do to limit personal exposure to air pollution ... The types of pollutants causing poor air quality ... A forecast of how long an air pollution episode is expected to last ... The air quality index or level of pollution for that day ... What governments are doing to address air pollution? (n=1,213)

It should be noted that the perceived usefulness of these types of information is very similar to that found in October 2000. That having been said, information regarding the types of pollutants causing poor air quality, a forecast of how long an air pollution episode is expected to last, and the air quality index or level of pollution for that day currently receive higher overall assessments of their usefulness than they did in October 2000.

Women assign somewhat higher levels of usefulness than do men to all of the types of information we examined in this survey. This difference was most notable for information that would inform individuals about what they can do to reduce air pollution (70% very useful vs. 60%).

In general, those who are 60 years of age or older tend to be the least positive about the various types of information; they are more likely than the other age groups to say that many of the types of information are not very or not at all useful. While those between 30 and 44 years of age (63%) are more likely to think that the air quality index or level of pollution for that day is very useful information for them to know, those between 45 and 59 years of age (59%) are more likely to think that what governments are doing to address air pollution is very useful information.

University graduates are more likely to suggest that the human health effects of air pollution (78%) and what individuals can do to reduce air pollution (71%) are very useful types of information. The least educated (67%) are more likely to suggest that a forecast of how long an air pollution episode is expected to last is very useful. The least affluent assign higher levels of usefulness than the other income groups to more than half of the seven types of information we investigated in this survey: the types of pollutants causing poor air quality (70% very useful); what individuals can do to limit personal exposure to air pollution (69% very useful); a forecast of how long an air pollution episode is expected to last (68% very useful); and what governments are doing to address air pollution (60% very useful).

Information preferences

	OCTOBER 2000		NOVEMBER 2001	
	USEFUL	NOT USEFUL	USEFUL	NOT USEFUL
What individuals can do to reduce air pollution	92	7	94	5
The human health effects of air pollution	94	6	93	6
The types of pollutants causing poor air quality	88	10	93	7
What individuals can do to limit personal exposure to air pollution	90	9	91	8
A forecast of how long an air pollution episode is expected to last	85	13	89	9
The air quality index or level of pollution for that day	83	16	89	11
What governments are doing to address air pollution	–	–	86	12

Q.35a-g

Please tell me if the following information about air pollution would be very, somewhat, not very or not at all useful for you to know? How about ... The human health effects of air pollution ... What individuals can do to reduce air pollution ... What individuals can do to limit personal exposure to air pollution ... The types of pollutants causing poor air quality ... A forecast of how long an air pollution episode is expected to last ... The air quality index or level of pollution for that day ... What governments are doing to address air pollution? (n=1,213)

For the November 2001 results, "useful" includes those who said "very" or "somewhat useful," while "not useful" includes those who said "not very" or "not at all useful." For the October 2000 results, "useful" includes those who assigned it a moderate or high level of usefulness on the 7-point scale used by EKOS; the "not useful" category includes those who assigned it a low usefulness score on the 7-point scale. In general, the question wording for the response categories was very similar for the two surveys.

Francophones are more likely than anglophones to suggest that each type of air pollution information is very useful. This difference was most significant for what governments are doing to address air pollution (72% vs. 47%) and the types of pollutants causing poor air quality (78% vs. 59%). Given this finding, it is not surprising to find that Quebecers are the most positive about the various types of information. Residents of Manitoba and Saskatchewan are more likely than others to suggest that the air quality index or level of pollution for that day is not useful information.

Canadians living in large communities are more likely to suggest that what individuals can do to limit personal exposure to air pollution (67%), the air quality index or level of pollution for that day (62%), and what governments are doing to address air pollution (58%) is very useful information.

It is interesting to note that Canadians who feel that the environment has the biggest impact on a person's health (78%) are more likely than those who feel that other factors have the biggest impact to say that information regarding the human health effects of air pollution is very useful.

As concern about air quality and the perceived effects of air pollution on health increases, positive assessments of these types of information also increase. While one-third (34%) of those who are not concerned about air quality feel that it is very useful for them to know the air quality index or level of pollution for that day, this proportion increases to more than six in ten (63%) among those who are very concerned about air quality. Similarly, eight in ten (81%) of those who feel that air pollution has a great deal of effect on health think that the human health effects of air pollution is very useful information, compared to only one-half of those who feel that air pollution has little to no effect on health (51%).

Information preferences

By language Very useful

	TOTAL	ENGLISH-SPEAKING	FRENCH-SPEAKING
The human health effects of air pollution	72	69	83
What individuals can do to reduce air pollution	66	61	79
The types of pollutants causing poor air quality	64	59	78
What individuals can do to limit personal exposure to air pollution	62	58	75
A forecast of how long an air pollution episode is expected to last	62	61	64
The air quality index or level of pollution for that day	57	56	60
What governments are doing to address air pollution	53	47	72

Q.35a-g

Please tell me if the following information about air pollution would be very, somewhat, not very or not at all useful for you to know? How about ... The human health effects of air pollution ... What individuals can do to reduce air pollution ... What individuals can do to limit personal exposure to air pollution ... The types of pollutants causing poor air quality ... A forecast of how long an air pollution episode is expected to last ... The air quality index or level of pollution for that day ... What governments are doing to address air pollution? (n=1,213)

Those who report that air pollution in their community has worsened provide more positive assessments for information concerning the human health effects of air pollution (78% very useful), what individuals can do to reduce air pollution (72% very useful) and the air quality index or level of pollution for that day (68% very useful). Those who feel that air pollution in their community has improved and those who feel that it has worsened assign virtually identical levels of usefulness to information regarding what individuals can do to limit their personal exposure to air pollution (68% very useful vs. 67%), a forecast of how long an air pollution episode is expected to last (67% very useful vs. 68%), and the types of pollutants causing poor air quality (67% very useful vs. 67%).

Those with respiratory illnesses are more likely than those without respiratory illnesses to suggest that each of type of air pollution-related information is very useful. This difference was most notable for information regarding the human health effects of air pollution (80% vs. 70%) and a forecast of how long an air pollution episode is expected to last (72% vs. 59%).

It is worth noting that those who strongly agree that individuals can take actions to effectively reduce air pollution assign higher levels of usefulness for each type of information than those who are less optimistic about the effectiveness of individual action. Not surprisingly, this is most notable with respect to information regarding what individuals can do to limit personal exposure to air pollution and what individuals can do to reduce air pollution.

Information preferences

By air pollution situation in community Very useful

	Total	Improved	Stayed same	Become worse
The human health effects of air pollution	72	71	69	78
What individuals can do to reduce air pollution	66	63	62	72
The types of pollutants causing poor air quality	64	67	60	67
What individuals can do to limit personal exposure to air pollution	62	68	59	67
A forecast of how long an air pollution episode is expected to last	62	67	59	68
The air quality index or level of pollution for that day	57	55	50	68
What governments are doing to address air pollution	53	59	50	55

Q.35a-g

Please tell me if the following information about air pollution would be very, somewhat, not very or not at all useful for you to know? How about ... The human health effects of air pollution ... What individuals can do to reduce air pollution ... What individuals can do to limit personal exposure to air pollution ... The types of pollutants causing poor air quality ... A forecast of how long an air pollution episode is expected to last ... The air quality index or level of pollution for that day ... What governments are doing to address air pollution? (n=1,213)

12.5 Credibility of Information Sources

Environment Canada and Health Canada are seen as the most credible sources of air pollution information, while municipal governments and the Internet are seen as less credible.

Canadians tend to offer positive assessments regarding the credibility of the various information sources we reviewed in this survey. All of the sources, except the Internet and municipal governments, are seen as either somewhat or very credible by more than eight in ten Canadians.

More than nine in ten believe that Environment Canada (69% very credible, 26% somewhat credible) and Health Canada (65% very credible, 28% somewhat credible) are credible sources of information about air pollution. The mainstream media (42% very credible, 48% somewhat credible) and partnerships among governments, health groups and non-governmental organizations (41% very credible, 46% somewhat credible) are also seen as credible sources of information by an overwhelming majority of Canadians. Eight in ten think that their provincial government (33% very credible, 50% somewhat credible) and environmental groups (35% very credible, 45% somewhat credible) are credible sources of information on this subject. Less than two in ten provide negative assessments of the credibility of their provincial government (11% not very credible, 5% not at all credible) and environmental groups (12% not very credible, 7% not at all credible).

Three-quarters (75%) view their municipal governments as a very (26%) or somewhat credible (49%) source of air pollution information. Two in ten (22%) suggest their municipal government is a not very (15%) or not at all credible (7%) source of information. While seven in ten see the Internet (28% very credible, 42% somewhat credible) as a credible source of information, Canadians also tend to provide more negative assessments (12% not very credible, 6% not at all credible) of this medium. In addition, one in ten Canadians (12%) offer no opinion on the credibility of the Internet.

Credibility of information sources

	Very credible	Somewhat credible	Not very credible	Not at all credible	DK/NA
Environment Canada	69	26	3	*	2
Health Canada	65	28	4	1	2
The mainstream media (radio, TV, newspapers, magazines)	42	48	7	2	1
Partnerships among governments, health groups and non-governmental organizations	41	46	8	2	3
An environmental group (e.g., Greenpeace, Friends of the Earth, etc.)	35	45	12	7	1
Your provincial government	33	50	11	5	2
The Internet	28	42	12	6	12
Your municipal government	26	49	15	7	3

*Less than one percent

Q.36a-h

Whether or not you would seek information about air pollution, please tell me whether you think each of the following would be a very, somewhat, not very, or not at all credible source of information about this subject ... The mainstream media (radio, TV, newspapers, magazines) ... Health Canada ... Environment Canada ... The Internet ... Your provincial government ... An environmental group (e.g., Greenpeace, Friends of the Earth, etc.) ... Your municipal government ... Partnerships among governments, health groups and non-governmental organizations. (n=1,213)

Canadians between 16 and 29 years of age feel more positively about the credibility of the Internet and Health Canada than do older Canadians. Those between 30 and 44 years of age tend to provide more positive assessments of the credibility of Health Canada, the Internet, Environment Canada and their municipal government. Canadians 60 years of age are less flattering regarding the credibility of the Internet.

Francophones are more likely than anglophones to report that each of these information sources is very credible. While francophones (29%) are somewhat more likely than anglophones (25%) to suggest that their municipal government is a very credible source of information about air pollution, they are also more likely to offer negative assessments of the credibility of their municipal government (28% not very or not at all credible vs. 20%).

Those with less than a high school education tend to report higher levels of credibility for the mainstream media, environmental groups and their municipal governments; however, they are less complimentary about the credibility of the Internet. Better educated Canadians are the most positive about the credibility of partnerships among governments, health groups and non-governmental organizations.

Women (45%) are more likely than men (39%) to suggest that the mainstream media (e.g., radio, TV, newspapers, magazines) are a very credible source of information about air pollution.

The most affluent are more likely to say that both Environment Canada (79%) and Health Canada (75%) are very credible sources of information. They also assign a higher overall level of credibility to the Internet (77% somewhat and very credible). Those with an annual household income between $50-70K are more likely than others to view Environment Canada (76% very credible) and partnerships among governments, health groups and non-governmental organizations (52% very credible) as having more credibility. The least affluent provide more positive assessments of the credibility of environmental groups (40% very credible), their provincial governments (38% very credible) and their municipal governments (31% very credible).

Credibility of information sources

By language Very credible

	TOTAL	ENGLISH-SPEAKING	FRENCH-SPEAKING
Environment Canada	69	68	73
Health Canada	65	64	71
The mainstream media (radio, TV, newspapers, magazines)	42	36	58
Partnerships among governments, health groups and non-governmental organizations	41	36	54
An environmental group (e.g., Greenpeace, Friends of the Earth, etc.)	35	32	45
Your provincial government	33	30	42
The Internet	28	26	32
Your municipal government	26	25	29

Q.36a-h

Whether or not you would seek information about air pollution, please tell me whether you think each of the following would be a very, somewhat, not very, or not at all credible source of information about this subject ... The mainstream media (radio, TV, newspapers, magazines) ... Health Canada ... Environment Canada ... The Internet ... Your provincial government ... An environmental group (e.g., Greenpeace, Friends of the Earth, etc.) ... Your municipal government ... Partnerships among governments, health groups and non-governmental organizations. (n=1,213)

Canadians from small communities tend to offer the least positive assessments of the credibility of their municipal governments (28% not very or not at all credible).

It is worth noting that while concern about air quality and the perceived effects of air pollution on health have had a significant impact on opinions and practices in a number of issues relating to air pollution, they do not appear to have as much of an impact on perceptions of credibility of possible information sources. That having been said, those who are very concerned about air quality and those who feel that air pollution has a great deal of effect on health do tend to offer more positive assessments of the credibility of the various information sources.

While the focus group participants had strong reservations about the credibility of air quality information provided by public companies offering related products and services, there was a consensus that information provided by meteorologists, universities, scientists and experts would be credible and respected. With regard to government departments, there was a sense that Environment Canada would enjoy particular respect and credibility when it came to reporting on weather conditions and environmental impacts. Health Canada, while not seen as having any particular expertise when it comes to assessing weather conditions, is seen to be the most credible in assessing the health impacts of air quality. As one participant commented:

> *"I would probably listen to a message from them (Environment Canada) in a more environmentally friendly way than from Health Canada, for example. Health Canada in terms of the health benefits and pros and cons, that sort of thing, but in terms of the environment, Environment Canada to me would be more credible."*

Health-oriented advocacy groups, such as the Canadian Lung Association or the Heart and Stroke Foundation, were seen to be generally credible, but not as credible as government departments. As for environmental groups, some participants viewed these groups as "too sensational" to be considered reliable information sources. Montreal participants expressed a preference that the air quality index come from a collaborative effort or partnership between governments and NGOs rather than from a single source, since this would increase the perceived reliability of the information. While participants in other locations had a slight preference for a more collaborative approach, they felt that a single credible and objective source could also be an effective sponsor of the air quality index.

13.1 Analysis

As part of this study, Environics conducted a cluster analysis of the data to see if there were distinct groups within the Canadian population that had internally coherent views toward air pollution and health. A number of cluster solutions were proposed, based on a factor analysis of a selection of attitudinal questions.

In this segmentation strategy, rather than simply segmenting the public on their opinions and attitudes toward air pollution per se, we sought first to find more general values and attitudes that might provide a framing orientation to the issue of air pollution for individuals. These more general attitudes toward issues, such as a sense of control over personal health, concern about air quality and faith in the efficacy of environmental-friendly actions, ought to provide an interpretative framework predictive of people's specific attitudes toward air pollution and personal health.

By identifying these predictive, and likely explanatory factors, we would be more likely to give wise counsel about the dynamics of people's attitudes toward this issue, that is, about the main psychological reasons that drive their attitudes of confidence, anxiety, neutrality, indifference, or ambivalence toward air pollution and personal health. In this approach, we attempted to build the segmentation "space" of those general "independent" variables that cause, or are at least strongly predictive of, attitudes towards air pollution and health. The segmentation proceeded in several stages.

Stage 1. First, we examined a variety of items for their face validity and suitability as candidates for their role as predictive factors that might frame the debate for people and best predict their specific attitudes toward air pollution and health. Ten items were selected to form the basis of the segmentation.

Stage 2. We next entered these ten items into a principle components analysis (PCA) designed to unearth any latent, more general constructs that might exist. As the result of this analysis, we uncovered three simple, coherent factors that emerged in various iterations of the analysis. These three factors are:

- A sense that health and life in general are beyond personal control (Questions 26a, 26c, 26d, 26e)
- Concern regarding air pollution & health (Questions 4b, 5, 15)
- Willingness to take action on air pollution and the belief that those actions will be effective (Questions 24, 26b, 28)

Stage 3. To conduct a segmentation based on respondents' scores on these three underlying attitude orientations, factor scores were computed that represent the strength or weakness (relative to all others in the sample) of each respondent on each of the factors. The factors served as new, hierarchically derived variables that became the basis for segmentation.

Stage 4. At the fourth stage, cluster analysis, using SPSS (v10.0) K-means cluster, was executed in order to generate solutions of various segment sizes. Segmentation solutions of size 4, 5, 6 and 7 were all run. In order to ensure the stability and replicability of the solutions, 25 iterations of each size were run. The data were randomly sorted at the start of each iteration to provide a different start point for the K-means cluster analysis.

Stage 5. The selection of the final solution size was done using a combination of statistical analysis and judgment. First, solution sizes that differed dramatically among the 25 iterations were considered inherently unstable, and therefore discarded. Then, the most representative, stable solution of each of the remaining segmentation sizes was selected for the next stage of analysis. Judgement was then used to decide which of the remaining size solutions was chosen as final.

For example, the choice of the number of segments (or clusters) selected often weighs the need for plans or policies to be developed for relatively few audiences against the need for an articulated space of respondents' mental, emotional and evaluative positions on the issue. In addition, sometimes a

solution may be ruled out because one of its segments is relatively much smaller than the others, because there is a general imbalance in the population incidences (sizes) of each group, or because one or more of its members lacks intuitive appeal.

In this case, we examined each solution to see:

1) How successfully it divided respondents into well-differentiated groups according to their attitudes toward air pollution and health, and

2) How successfully it created a set of distinct and cogent issue dynamics associated with each segment, based on the underlying explanatory factors that would help to explain and understand why each group holds the opinions and attitudes they homogeneously expressed.

On the basis of these various criteria, we chose the five-segment solution as the most effective for our purposes and carried it forward for interpretation, profiling and the development of an explanatory rationale concerning attitudes and behaviours relating to air pollution.

13.2 Description of the Attitudinal Groups

DETACHED CYNICS

Comprising one-tenth of the Canadian population (11%), Detached Cynics tend to be younger (31% are between 16 and 29 years of age) and are the least concerned about air quality (13% very concerned). They are also the least likely to spontaneously mention the environment (18%) as a factor that has an impact on a person's health. In general, Detached Cynics have lower levels of concern about all the environmental problems we examined in this survey, and are the least likely of the five attitudinal groups to identify air pollution or air quality (12%) as the most important environmental problem facing Canadians today.

Detached Cynics' lack of concern about air pollution can be further found in the low proportion that suggest it affects the health of Canadians a great deal (6%). This lack of concern may be attributed to the fact that members of this group are less likely to have a respiratory illness (14%) and are less likely to suggest that they suffer (or have suffered) any health problems that were caused by air pollution (5%).

Members of this group are less familiar with the air quality index and are the most likely to suggest that they have never used it. In addition, they are the most likely to report that they never look for air pollution information. They also have a greater preference to have air pollution information only provided to Canadians when there is an air pollution problem (30%).

Looking at attitudinal responses from this group, we find that Detached Cynics are more likely to agree that it is acceptable that an industrial society such as ours produces a certain degree of pollution (mean 4.6[12]), that they really don't have much control over

12 Responses to the attitudinal questions were placed on a scale of one to seven, where one meant that the respondent strongly disagreed with the statement, seven meant that the respondent strongly agreed with the statement and four meant that they neither agreed or disagreed with the statement. The results are expressed as the mean of all the responses.

their life (mean 3.9), and that most impacts of air pollution will occur far in the future and will not affect their life (mean 3.5). Although they are more likely to agree they can't do much about their health except deal with it when it comes (mean 3.9), they also display high levels of ambivalence towards this statement (21% giving a neutral statement).

Detached Cynics are the least likely to agree that they are prepared to make major changes in their daily lives to help reduce air pollution (mean 3.2, 19% strongly disagree). Similarly, members of this group are the least likely to indicate that they or someone in their household would do anything differently as a result of an air quality warning being issued (66% not very or not at all likely). Not only are Detached Cynics the least likely to agree that individuals can take actions that will effectively reduce air pollution, they also tend to be the least likely to personally undertake activities to help reduce air pollution.

The cynical opinions of this group can be further seen in their negative attitudes about the usefulness of various types of air pollution information and the credibility of information sources reviewed in this survey.

It is interesting to note that members of this group are the most likely to suggest that air pollution in their community has remained constant over the last five years (73%).

Despite their relative youth, members of the Detached Cynics are more likely to be more affluent members of the Canadian population (70K+, 29%). They are also more likely to be men (60%) and from the Prairies (21%) or Vancouver (11%).

Likelihood of undertaking various measures to reduce air pollution

By attitudinal segmentation Detached Cynics

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	37	41	9	11	1	1
Limit your use of gas lawn mowers, leaf blowers, snow blowers	23	28	12	23	14	–
Take alternative methods of transportation, such as public transit or carpooling, to work	21	31	13	28	6	–
Learn more about efficient driving habits	19	37	17	21	4	2
Reduce the use of air conditioning	19	33	13	18	17	–
Pay more for gasoline or other non-renewable fuels	8	23	26	39	4	1
Pay higher taxes to support action against air pollution	8	18	23	48	1	1
Support or join an environmental group	5	9	37	48	1	1

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

CONCERNED AND EMPOWERED

The largest of the five attitudinal groups (35% of the Canadian population), Concerned and Empowered members are the most likely to spontaneously identify the environment (39%) as a factor that has an impact on a person's health. They also have higher levels of concern about environmental issues, including air quality (76% very concerned), and are more likely to suggest that air pollution has a great deal of effect on the health of Canadians (62%). Furthermore, this group is the most likely to disagree that most impacts of air pollution will occur far in the future and will not affect their life (mean 1.5, 67% strongly disagree) and that some pollution is acceptable in an industrial society such as ours (mean 3.3, 24% strongly disagree).

Concerned and Empowered members are the most likely (29%) to indicate that they suffer (or have suffered) health problems that they felt were due to air pollution. As a result, this group is more likely (13%) to have received advice from a doctor regarding the effect of air pollution on their health.

Members of this group are very confident in their own abilities to shape and control their own destiny. These individuals are the most likely to disagree that they have no control over their life (mean 2.0, 50% strongly disagree) and that they can't do much about their health (mean 1.8, 55% strongly disagree). This confidence in their ability to take effective action can also be seen in the high proportion who strongly agree that individuals can take actions to effectively reduce air pollution (71% strongly agree) and the fact that they are more likely to agree that they are prepared to make changes in their daily life to help reduce air pollution (mean 5.5, 36% strongly agree). Furthermore, Concerned and Empowered members are the most likely (55% very likely) to indicate that they or someone in their household would change their behaviour due to an air quality warning being issued.

In general, Concerned and Empowered members are more likely than the other four attitudinal groups to be very likely to undertake a number of different activities to help combat air pollution. This increased willingness to take action compared to the Canadian average was most noticeable regarding willingness to choose a more fuel-efficient car (71% very likely vs. 63%), take alternative methods of transportation to work (60% very likely vs. 50%), learn more about efficient driving habits (60% very likely vs. 52%), and reduce their use of air conditioners (45% very

likely vs. 37%). Members of this group also express higher overall levels of willingness to limit their use of small gas-powered engines, pay more for gasoline or other non-renewable fuels, and pay higher taxes to support action against air pollution.

Members of this group tend to believe that air pollution information should be provided to Canadians all the time (88%).

Not only are Concerned and Empowered members the most frequent users of the air quality index (22% say frequently), they are also the most likely (83%) to indicate that they would use it in the future if one existed in their area. In addition, they are the most likely to look for air pollution information either frequently (20%) or occasionally (49%). When it comes to sources of air pollution information, Concerned and Empowered members have a greater reliance on newspapers and the Internet.

When it comes to assessing the usefulness of various types of air pollution information, members of this group are the most positive, especially with respect to information regarding the human health effects of air pollution (81% very useful).

In addition, Concerned and Empowered members also assign higher levels of credibility to Environment Canada (74% very credible) and partnerships among governments, health groups and non-governmental organizations (48% very credible) as sources of air pollution information.

A number of demographic characteristics distinguish this group. They have the highest level of educational attainment of the five attitudinal groups. One-third of Concerned and Empowered members (36%) have completed university. Members of this group are also more likely to be women (58%) and have an annual household income between $50,000 and $70,000 (20%).

Likelihood of undertaking various measures to reduce air pollution

By attitudinal segmentation Concerned and Empowered

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	71	21	5	1	2	*
Learn more about efficient driving habits	60	28	6	2	3	1
Take alternative methods of transportation, such as public transit or carpooling, to work	60	22	5	5	7	1
Limit your use of gas lawn mowers, leaf blowers, snow blowers	51	26	9	3	10	1
Reduce the use of air conditioning	45	27	9	4	15	1
Support or join an environmental group	22	34	24	17	2	*
Pay more for gasoline or other non-renewable fuels	21	35	23	17	2	2
Pay higher taxes to support action against air pollution	18	38	23	21	–	*

*Less than one percent

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

PASSIVE OPTIMISTS

The smallest of the five attitudinal groups developed for this study (8% of the Canadian population), Passive Optimists are the most positive about the air pollution situation in their community (34% improved). They are also more likely to agree (65% strongly agree) that individuals can take action that will effectively reduce air pollution. Furthermore, members of this group are more likely than their counterparts from the other attitudinal groups to prefer voluntary action by individuals and companies compared to government regulations and enforcement.

However, despite this optimism regarding the effectiveness of individual action, Passive Optimists are less willing to personally undertake certain activities that can help combat air pollution (pay higher taxes to support action against air pollution, 64% not very or not at all likely; limit their use of gas lawn mowers, leaf blowers, or snow blowers, 26% not very or not at all likely; choose a more fuel-efficient car, 16% not very or not at all likely).

Overall, Passive Optimists are less concerned about environmental problems, especially air quality (52% not very or not at all concerned). In addition, they are the most likely (39%) to suggest that air pollution has little to no effect on health. This lower level of concern may be due in part to the fact that members of this group are less likely (13%) to indicate that they currently suffer (or have suffered) any health problems due to air pollution and of the five attitudinal groups, they are least likely to have been diagnosed with a respiratory illness.

Members of this group are the least familiar (43% somewhat or very familiar) with the air quality index and more likely (56%) to have never used it. They also have a greater preference to have air pollution provided to Canadians only when there is an air quality problem.

Looking at attitudinal responses from this group, we find that Passive Optimists tend to be ambivalent about the impact of air pollution on their life (17% gave a neutral response) and about the acceptability of pollution in an industrial society such as ours (28% gave a neutral response).

Likelihood of undertaking various measures to reduce air pollution

By attitudinal segmentation Passive Optimists

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	56	25	10	6	4	–
Take alternative methods of transportation, such as public transit or carpooling, to work	55	22	8	6	8	–
Learn more about efficient driving habits	41	38	5	5	4	6
Limit your use of gas lawn mowers, leaf blowers, snow blowers	39	26	14	12	9	–
Reduce the use of air conditioning	31	33	10	10	13	2
Support or join an environmental group	16	29	26	29	–	1
Pay more for gasoline or other non-renewable fuels	12	33	18	28	7	3
Pay higher taxes to support action against air pollution	10	24	24	40	1	–

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

Passive Optimists tend to be more critical about the credibility of their municipal governments, the Internet and environmental groups as information sources in this area.

Looking at demographic characteristics, Passive Optimists have an overrepresentation from those between 30 and 44 years of age (38%). Those with annual household incomes between $30,000 and $50,000 (31%) and those who reside in communities between 5,000 and 100,000 inhabitants (24%) also figure prominently among members of this group. Members of this group are also more likely to be men (58%).

PARADOXICAL FATALISTS

Comprising one-quarter of Canadians (27%), Paradoxical Fatalists are the most likely to believe that they have no control over their life (mean 4.7, 24% strongly agree) and that they can't do much about their health except deal with the sickness when it comes (mean 5.3, 38% strongly agree). They also tend to agree that it is acceptable that an industrial society such as ours produces a certain degree of pollution (mean 4.8).

Paradoxical Fatalists are also the most likely of the five attitudinal groups to suggest that the environment (17%) has the biggest impact on a person's health. They also have higher levels of concern about air quality (78% very concerned) and have the highest proportion that feels that air pollution has a great deal of effect on health (66%). However, members of this group do tend to be more positive about the air pollution situation in their community (14% improved; 56% stayed the same) and are the most likely to agree that most impacts of air pollution will occur far in the future and will not affect their life (mean 3.8, 18% strongly agree).

Despite having more fatalistic attitudes and higher levels of concern about air pollution and its impact on health, Paradoxical Fatalists are the most positive that individuals can take actions to effectively reduce air pollution (67% strongly agree). In addition, they are personally more likely to undertake a number of activities to reduce air pollution (learn more about efficient driving habits, 58% very likely; take alternative methods of transportation to work, 57% very likely; support or join an environmental group, 26% very likely). In general, members of this group indicate that they are willing to make major changes in their daily lives to help reduce air pollution (mean 5.3, 32% strongly agree) and that they are more likely to change their behaviour if an air quality warning was issued (89% somewhat or very likely).

Members of this group tend to be more positive about the various types of air pollution information we examined in this survey, especially information concerning the human health effects and a forecast of how long an air pollution episode is expected to last. In addition, they tend to assign higher levels of credibility to the mainstream media (51% very credible), environmental groups (40% very credible), their provincial government (38% very credible) and the Internet (37% very credible).

A number of demographic characteristics distinguish this group. They are the least affluent and the least well educated of the five attitudinal groups. For example, four in ten Paradoxical Fatalists (41%) have an annual household income of less than $30,000 and a similar proportion (45%) have a high school education (24%) or less (21%). This group is also more likely to be 60 years of age and older (29%), francophone (30%) and living in Quebec (32%).

Likelihood of undertaking various measures to reduce air pollution

By attitudinal segmentation Parodoxical Fatalists

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	67	23	4	3	3	*
Learn more about efficient driving habits	58	26	5	3	4	2
Take alternative methods of transportation, such as public transit or carpooling, to work	57	18	7	7	10	–
Limit your use of gas lawn mowers, leaf blowers, snow blowers	43	29	9	6	13	*
Reduce the use of air conditioning	38	30	10	6	15	*
Support or join an environmental group	26	24	26	22	1	1
Pay more for gasoline or other non-renewable fuels	21	27	20	28	3	1
Pay higher taxes to support action against air pollution	15	31	25	29	*	–

* Less than one percent

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

ANXIOUS AND ALIENATED

The remaining attitudinal group, Anxious and Alienated, are the most likely to identify air pollution/air quality (34%) as the most important environmental problem facing Canadians today and report higher levels of concern about air quality (77% very concerned). Comprising one-fifth of the population (19%), members of this group are more likely to say that air pollution affects the health of Canadians a great deal (61%) and are the most pessimistic about air pollution in their community (69%, became worse over the last five years). Furthermore, they are more likely to disagree that most impacts of air pollution will occur in the future and will not affect their lives (mean 2.2).

Despite this higher level of concern about air issues, members of this group are less likely to turn this concern into action. They would be less likely to change their behaviour when confronted with an air quality warning (17% not at all likely to do something different) and they are the least optimistic regarding the individual's ability to take actions that will effectively reduce air pollution. In addition, they are very ambivalent (mean 3.8, 24% neutral) about their willingness to make major changes in their daily life, including driving less, to help reduce air pollution.

With respect to specific individual actions, Anxious and Alienated members are less likely to suggest that they would join or support an environmental group (59% not very or not at all likely), pay more for gasoline or other non-renewable fuels (53% not very or not at all likely) or take alternative methods of transportation to work (24% not very or not at all likely).

Members of this group tend to suggest that the federal government (41%) should play the lead role against air pollution problems. They also put much more faith in government regulations and enforcement (86%) compared to voluntary action by companies (11%) when assessing the most effective approach to combat air pollution.

Likelihood of undertaking various measures to reduce air pollution

By attitudinal segmentation Anxious and Alienated

	Very likely	Somewhat likely	Not very likely	Not at all likely	Don't use/ not applicable	DK/NA
Choose a more fuel efficient car	60	23	8	8	2	–
Learn more about efficient driving habits	54	26	9	8	2	–
Limit your use of gas lawn mowers, leaf blowers, snow blowers	44	30	7	8	11	*
Take alternative methods of transportation, such as public transit or carpooling, to work	37	26	9	15	13	–
Reduce the use of air conditioning	34	28	11	11	16	–
Pay higher taxes to support action against air pollution	16	30	24	29	–	1
Pay more for gasoline or other non-renewable fuels	16	29	27	26	2	*
Support or join an environmental group	16	24	25	34	1	–

*Less than one percent

Q.31a-h

Would you be very, somewhat, not very, or not at all likely to personally undertake each of the following activities to help combat air pollution ... Take alternative methods of transportation, such as public transit or carpooling, to work ... Choose a more fuel efficient car ... Learn more about efficient driving habits ... Reduce the use of air conditioning ... Support or join an environmental group ... Limit your use of gas lawn mowers, leaf blowers, or snow blowers ... Pay more for gasoline or other non-renewable fuels ... Pay higher taxes to support action against air pollution? (n=1,213)

Of note, Anxious and Alienated members are the most familiar with the air quality index (57% somewhat or very familiar). However, those that are not at all familiar with this index are less likely to use it in the future.

Members of this group are more likely to be men (54%), between 30 and 44 years of age (36%), anglophones (80%), and from Ontario (47%), especially Toronto (21%).

Responses to attitudinal questions

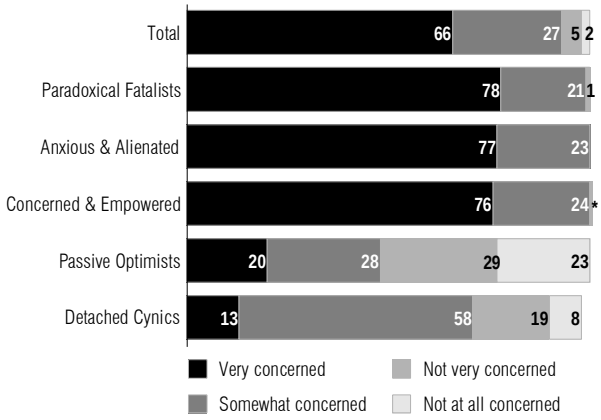
By segmentation Means

	Total	Detached Cynics	Concerned & Empowered	Passive Optimists	Paradoxical Fatalists	Anxious & Alienated
I am prepared to make major changes in my daily life, including driving less, to help reduce air pollution	4.9	3.2	5.5	5.2	5.3	3.8
It is acceptable that an industrial society such as ours produces a certain degree of pollution	4.0	4.6	3.3	4.0	4.8	3.8
As far as my health is concerned, there's not much I can do except deal with sickness when it comes	3.3	3.9	1.8	3.0	5.3	3.2
I really don't have much control over my life, I'm just trying to keep up with all of the demands on me	3.2	3.9	2.0	2.6	4.7	3.3
Most impacts of air pollution will occur far in the future and will not affect my life	2.6	3.5	1.5	3.1	3.8	2.2

Q.26a-e

Using a scale from 1 to 7, where 1 means that you strongly disagree and 7 means that you strongly agree and 4 means that you neither agree nor disagree, please tell me how strongly you agree or disagree with the following statements ... Most impacts of air pollution will occur far in the future and will not affect my life ... I am prepared to make major changes in my daily life, including driving less, to help reduce air pollution ... I really don't have much control over my life, I'm just trying to keep up with all of the demands on me ... It is acceptable that an industrial society such as ours produces a certain degree of pollution ... As far as my health is concerned, there's not much I can do except deal with sickness when it comes. (n=1,213)

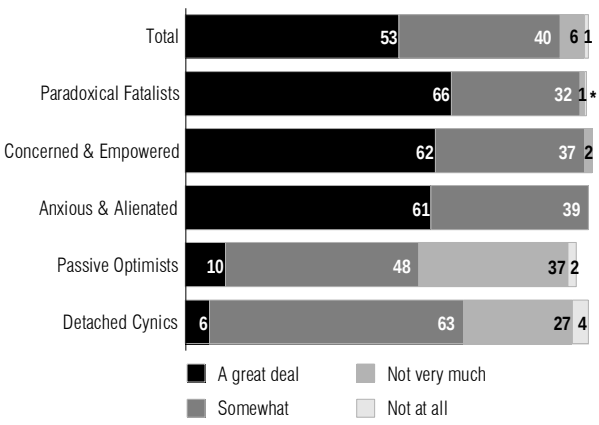
Concern about air quality
By attitudinal group



*Less than one percent

Q.4b
I'd like to ask you about various environmental issues. Are you very, somewhat, not very, or not at all concerned about each of the following ... The quality of air? (n=1,213)

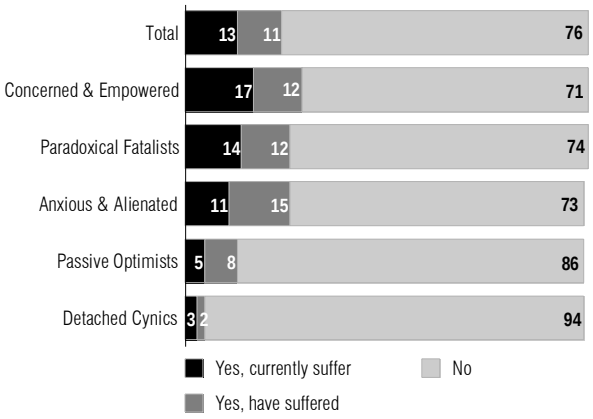
Perceived effect of air pollution
By attitudinal group



*Less than one percent

Q.5
In your view, to what extent does air pollution affect the health of Canadians? Does it affect them a great deal, somewhat, not very much or not at all? (n=1,213)

Health problems due to air pollution
By attitudinal group



Q.8
Do you personally suffer, or have you suffered, any health problems that you feel were due to air pollution? (n=1,213)

Recruitment Screener

Moderator's Guide

Questionnaire