

Respiragene™ Research Update - Jan 2010

Impact of Respiragene™ on Smokers' Behaviour and Attitudes - Preliminary Results

In June-October 2009, a pilot survey was conducted among 43 smokers in Auckland, New Zealand to assess the impact of taking the Respiragene test on attitudes and behaviour associated with quitting smoking.

Overall, the survey found:

- a favourable reaction by smokers and strong interest in taking the test
- test takers took increased and deliberate steps to try to quit
- test takers' intention to quit strengthened
- no de-motivating effects of taking the test were identified
- no harmful or counter-productive levels of anxiety were created
- test results were more motivating for higher risk individuals, but moderate risk individuals were also prompted to act.

Methodology

A telephone survey was conducted in two waves: Phase 1: n = 25 and Phase 2: n = 18. With most of the key findings, we have reported on the results of the total 43, but where data from Phase 2 are not yet available, we have reported on the results from the Phase 1 survey of 25. These instances with the smaller sample size are noted in the text.

The smokers participating in the survey were not engaged in any formal smoking cessation activities in the period before the survey and were not necessarily motivated to quit smoking. Survey participants were interviewed on their smoking history and their attitudes to smoking/quitting before taking the Respiragene test, and then again two weeks after they had received the results. Further follow up with survey participants over the coming months will provide a more complete picture of Respiragene's longer term impact.

The Respiragene test defines smokers as "Moderate" (an average smokers' risk), "High" (four times average) and "Very high" (ten times average).

Key Findings

1. Favourable reaction to the Respiragene test

The large majority of smokers were interested in taking the Respiragene test and found the results useful in motivating them to quit.

89% of eligible survey participants agreed to have the Respiragene test when it was offered to them. After testing, 96% said it was helpful (64% described it as "very helpful") in motivating them to quit and 96% would recommend it to their smoking friends and 100% to their family.

2. Spur to action as a result of testing with Respiragene.

Taking the Respiragene test resulted in significant changes in attitudes and a dramatic increase in behaviour associated with quitting, compared with the level prior to testing.

Before genetic testing, 8% had abstained from smoking for more than one day in the preceding six weeks. After genetic testing, 42% had abstained from smoking for more than one day, a five-fold increase. This total is comprised of two groups:

- **“Early stage quitters”** i.e. those who had quit for more than one week and were still smoke-free at the time of the interview (One-third of this group or 14% of the total).
- **“Attempting to quit.”** i.e. those who had abstained from smoking for more than 24 hours, but had relapsed by the time of the interview (Two-thirds of this group or 28% of the total).

3. Increased intention to quit smoking after testing ; no de-motivating effect.

Respiragene strengthened most smokers’ resolve to quit. In addition, there was no evidence that smokers were less likely to attempt to quit after taking the Respiragene test, i.e. there is no discernible de-motivating effect.

Prior to testing, 72% reported that they needed to stop smoking; post-testing this increased to 96%.

Even before testing, most smokers (75%) believed that taking the Respiragene test would make them more likely to quit smoking – even if their lung cancer risk was only at an average smoker’s risk level. Once respondents had their Respiragene result, 96% considered that they were more likely to stop smoking than before. The group who said their intentions would be unchanged, or that the test would make them less likely to quit, reduced from 25% pre-testing to 4% post-testing (See Table 1, Study 1).

Further evidence of increased resolve to quit is shown by the increase in the proportion of smokers who said they intended to quit within one year, after receiving their test results - 56% pre-test and 91% post-test (Phase 1 results only).

Note: Similar findings were recorded from a previous New Zealand survey (Study 2), conducted in 2008 where 138 smokers and 212 ex-smokers were interviewed by telephone. This study examined attitudes to quitting smoking in response to the results of a hypothetical genetic risk test for lung cancer (scenario based).

- **Ex-smokers.** In response to the question “If following a blood test, the results indicated you were at the average smokers risk for lung cancer, would you start smoking again?”, the survey found 99.5% of the 212 ex-smokers said “No”.
- **Current smokers:** When the 138 current smokers were asked “What is your view of smoking if your genetic test result indicated an average smokers risk for lung cancer”, they responded as shown in Table 1, Study 2, with 63% reporting “more likely to stop”. This increased to 81% if their hypothetical risk category was above average. No more than 5% stated they were “less likely to stop”.

Table 1. Smokers’ intention to quit as a result of lung cancer risk testing. (Study 1 and Study 2)

		Less likely to stop	Continue unchanged	More likely to stop
Study 1	Pre-test response	(%)	(%)	(%)
N = 50	“average risk”	5	20	75
N = 50	“>average risk”	2	9	89
N = 25	Post-test response*	4	0	96
Study 2				
N = 138	“average risk”	4	33	63
N = 138	“>average risk”	5	15	81

*Of the 25 smokers (Study 1, Phase 1), 15 were in the Moderate (average smoker’s risk), and 10 in the High/Very high risk categories.

From the similar findings in two separate studies, we conclude that smokers who claimed to be less likely to quit after testing was never more than 5%, even in Study 1 where actual testing took place. There was a consistent trend towards greater intention to quit for those who were greater than average risk for lung cancer.

4. No excessive anxiety created as a result of taking the Respiragene test.

The level of anxiety about lung cancer increased as a result of taking the test, but not to counterproductive levels.

After taking the Respiragene test, there was a small increase in the degree of worry about getting lung cancer (44% increased to 52% very/moderately worried) and a similar increase in the feelings of vulnerability (20% to 36% feeling very vulnerable). This modest increase in worry/vulnerability after testing indicates that genetic testing with Respiragene did not unduly worry smokers, but was sufficient to spur significantly more actions associated with quitting (Refer point 2 above). The literature indicates that people undergoing genetic testing are least worried by their result when they can take risk mitigating actions to reduce the risk conferred by their genetic profile. In contrast to most genetic tests, where there is little one can do to avoid a disease developing, smokers know that quitting will reduce their risk.

5. Correlation between Respiragene risk level and quitting actions

The Respiragene test is more motivating for smokers in the elevated risk categories than in the Moderate risk category, as would be expected. However, there were still significant numbers of smokers in the Moderate risk category who engaged in quitting behaviour as a result of taking the test. The Respiragene test motivated quitting action across the board.

Smokers in the High or Very high risk categories made up 38% of the survey participants, and 55% of the quitting

action group. Of this group, 63% took action toward quitting against a background of 8% seen before testing (eight-fold improvement). Although smokers in the Moderate risk group were relatively under-represented in the group taking quitting action, still, 30% of these Moderate risk smokers took action – a four-fold increase on the pre-test benchmark (Refer Table 2).

Table 2. Quitting action correlated with Respiragene risk level.

Risk level	Quitting action*	No action	Total
Very high or High	10	6	16
Moderate	8	19	27
Total	18	25	43

*Early stage quitters plus those attempting to quit.

Prepared By:
Dr Robert Young
Chief Scientific Officer – Synergens BioScience Ltd.
Associate Professor of Medicine and Molecular Medicine
School of Biological Sciences, University of Auckland