

vaccinate

survey 2008

Summary	3
1. Days Off Due To Influenza Symptoms.....	4
2. General Health And Well-Being Of Employees	4
3. Severity Of Influenza Like Symptoms	4
4. Severity Of Individual Influenza Like Symptoms.....	5
5. Severity Of Influenza Like Symptoms In The Families Of Employees	6
6. Severity Of Each Influenza Symptom For Families.....	7
7. Employee Gender.....	8
8. Employee Gender And Severity Of Influenza Symptoms In Families	9
9. Employee Gender and Days Off Work.....	10
10. Employee Age / General Health and Wellbeing / Days Off Work	10
11. Going To Work Sick.....	11
12. Affected By A Sick Employee	11

Summary

An online survey was completed by 1007 employees from six different organizations throughout New Zealand. This survey was completed to assess the effect of the 2008 influenza vaccine on employees and their workplace. Respondents were either vaccinated (n = 508) or non-vaccinated (n = 509).

The main findings of the survey were:

- Employees that were vaccinated took fewer days off work than employees that were non-vaccinated.
- Employees that were vaccinated reported fewer and less severe influenza like symptoms than employees that were non-vaccinated.
- Employees that were vaccinated reported that their families had fewer and less severe influenza like symptoms than employees that were non-vaccinated.
- There were no differences between vaccinated and non-vaccinated employees in how they rated their general health and well-being.
- Vaccinations implemented in the 2008 vaccination programme resulted in a saving of \$60.02 per person vaccinated¹ by reducing the level of sickness absence. This excludes the costs associated with reduced productivity and using temporary staff.

Although vaccinated and non-vaccinated employees considered themselves to be the same in their general health and well-being, there is clear evidence that being vaccinated improved employee health. The benefit of vaccinating employees is clearly evident for employees and their families.

¹ Based on an average salary of \$55,000.00 P/A

1. Days Off Due To Influenza Symptoms

When asked how many days were taken off due to influenza like symptoms, non-vaccinated employees ($M = 1.945$, $SD = 2.237$) took a significantly greater number off than those who were vaccinated ($M = 1.658$, $SD = 2.001$), $t(1005) = 2.145$ $p = .032$. When the difference in lost wages between vaccinated and non-vaccinated employees was calculated (based on an average salary of \$55,000 P/A), the vaccinate programme resulted in a saving of \$60.02 per person vaccinated. This is achieved by reducing the level of sickness absence and excludes the costs associated with reduced productivity and using temporary staff.

2. General Health And Well-Being Of Employees

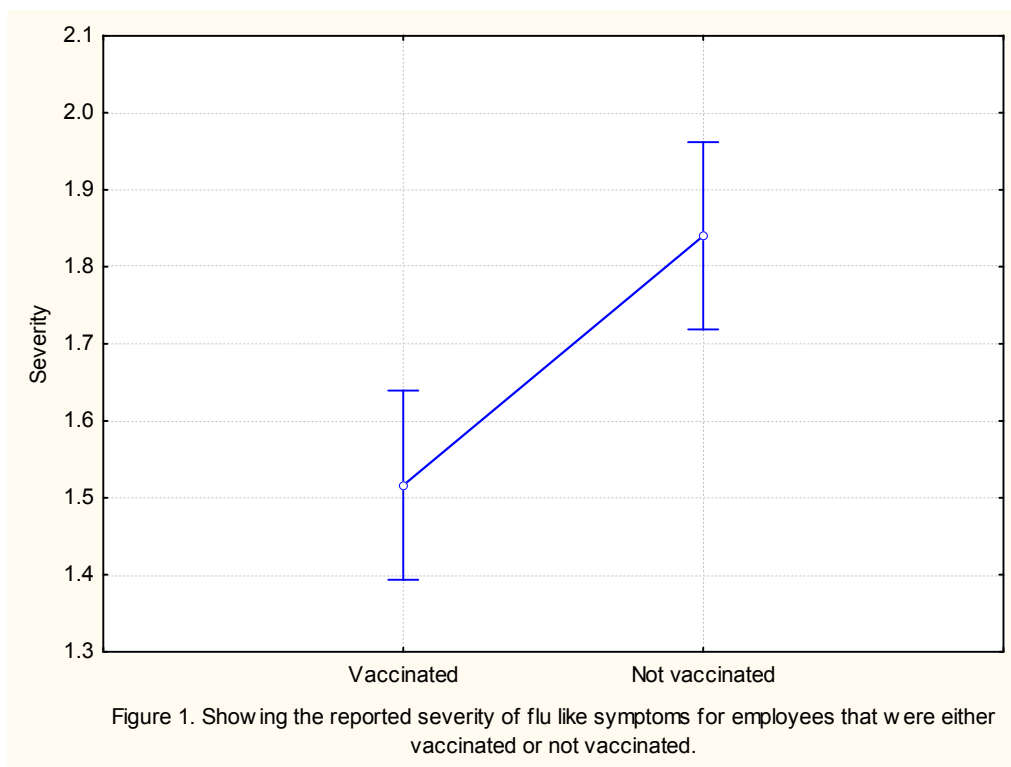
Employees rated their general health and well being on a scale that ranged from Extremely Poor (1) to Extremely Good (7), with a mid point of Average. When an independent t -test was calculated, the non-vaccinated group ($M = 5.459$, $SD = 1.102$) was not significantly different to the vaccinated group, $t(1005) = 0.196$, $p = .844$. Despite non-vaccinated employees taking a greater number of days off work due to influenza like symptoms, they did not rate their health and well being as being worse than the vaccinated group.

3. Severity Of Influenza Like Symptoms

Employees were asked whether they experienced any influenza like symptoms over the winter season and if so, how severe they were. Each of the 12 influenza like symptoms was rated on a scale ranging from Not At All Severe (1) to Extremely Severe (7); with a mid point of Moderately Uncomfortable (4). A non-applicable option was also included.

Symptoms included: Fever for at least 4-5 days (38 degrees or higher), Loss of Appetite, Dry Cough, Nausea, Vomiting, Diarrhoea, Exhaustion, Headache, Muscle Aches, Running Nose, Sore Throat, and Sneezing.

As shown in Figure 1, the reported severity of the symptoms was less for those employees that were vaccinated compared to those that were non-vaccinated. When a 2 (vaccinated vs. non-vaccinated) X 12 (symptoms) repeated measures ANOVA was performed, this difference was statistically significant, $F(1, 1005) = 13.516, p = .001$. As a group, vaccinated employees did not report influenza symptoms as being as severe as those who were non-vaccinated.



4. Severity Of Individual Influenza Like Symptoms

The ANOVA also revealed a significant interaction effect between employees that were either vaccinated or non-vaccinated and how they rated each influenza like symptom, $F(11, 11055) = 4.1269, p = .001$. Post hoc analysis (Tukey Honesty Test) revealed significant differences between ratings for Exhaustion, Muscle Aches and Sore Throat. As shown in Figure 2, these symptoms were more severe for employees that were non-vaccinated.

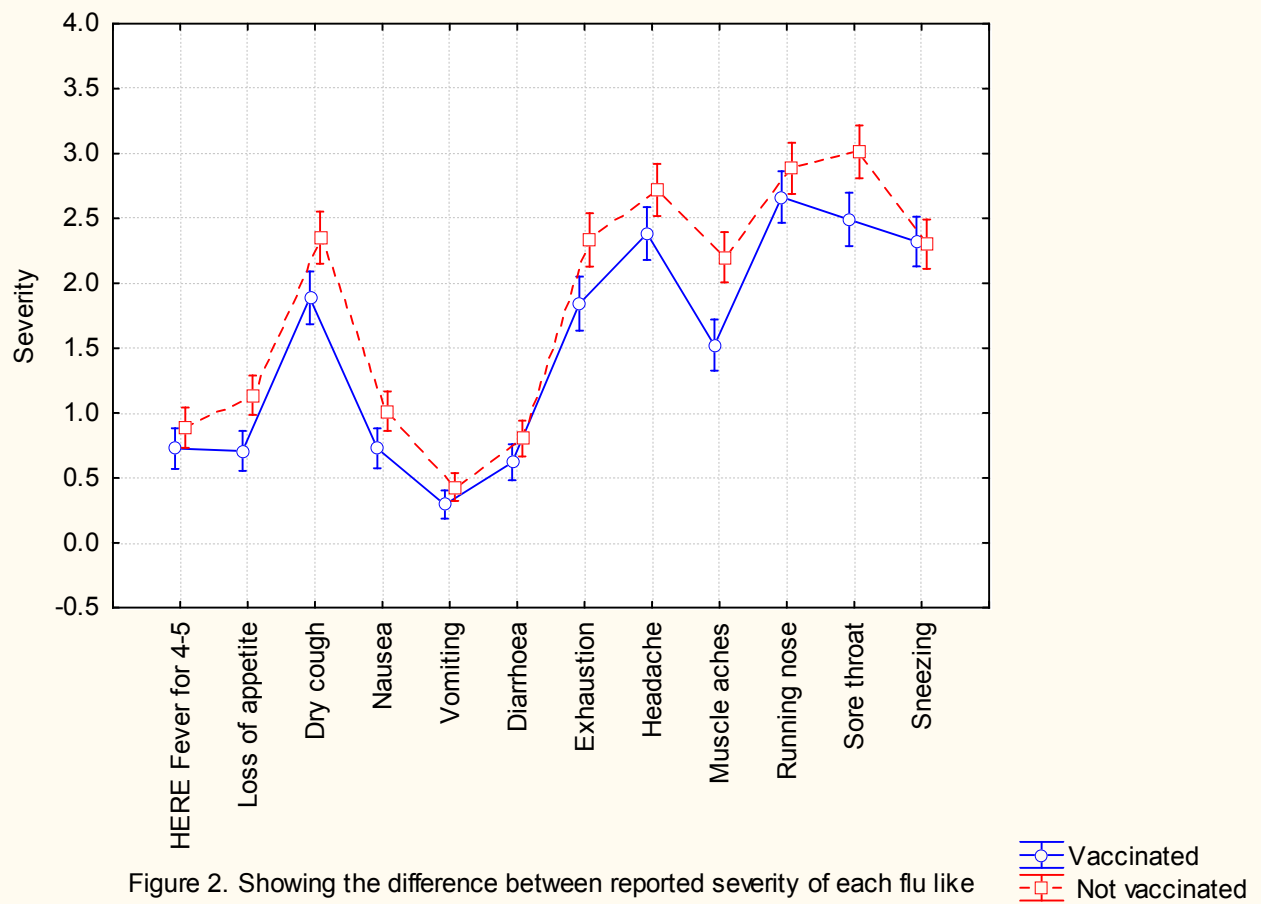


Figure 2. Showing the difference between reported severity of each flu like symptom for employees that were either vaccinated or not vaccinated.

5. Severity Of Influenza Like Symptoms In The Families Of Employees

Employees were also asked whether any members of their families experienced any of the 12 influenza like symptoms over the winter season and if so, how severe they were. As shown in Figure 3, the reported severity of the symptoms was less in the families that were vaccinated compared to the families of those non-vaccinated. When a 2 (vaccinated vs. non-vaccinated) X 12 (symptoms) repeated measures ANOVA was performed, this difference was statistically significant, $F(1, 1005) = 15.316, p = .00010$. Employees that were non-vaccinated reported more severe influenza like symptoms in their families than families of those that were vaccinated.

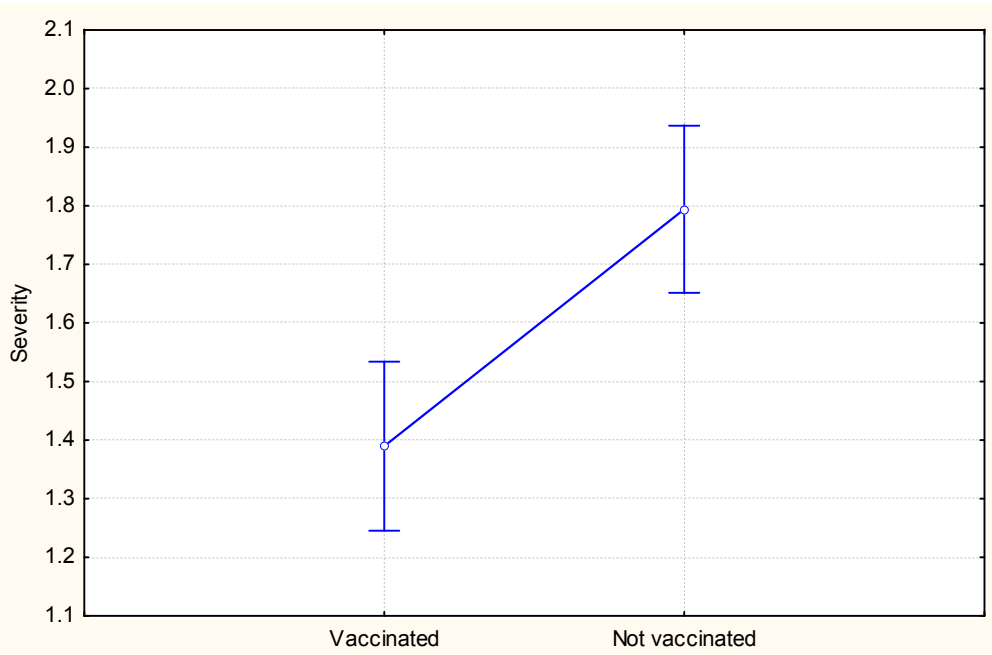
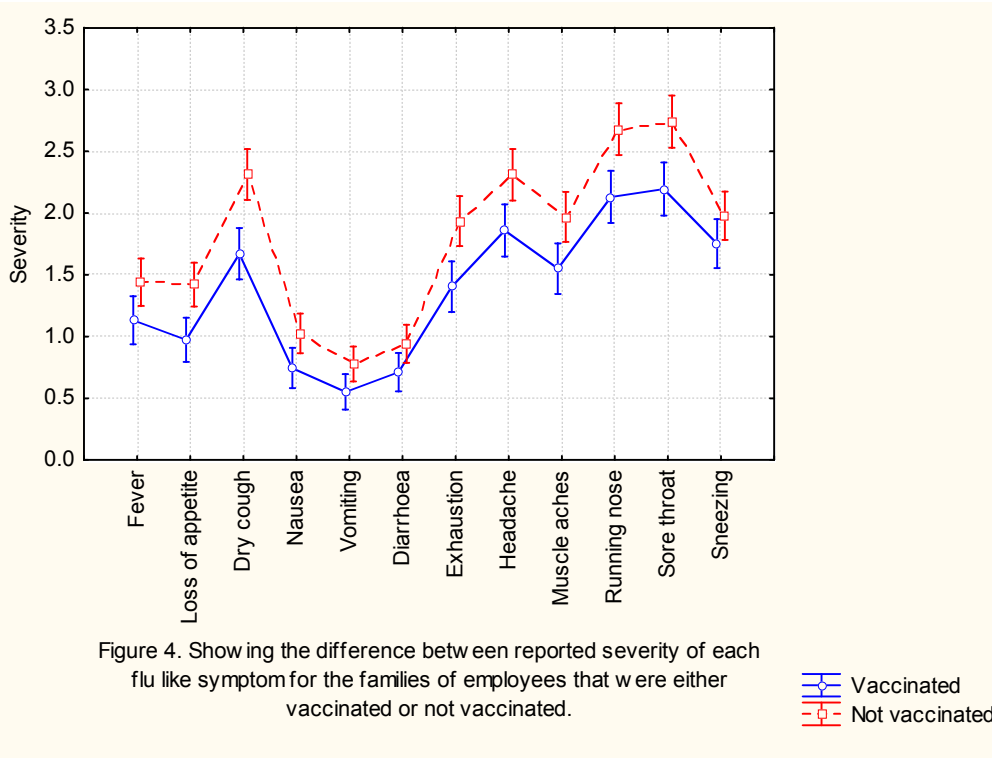


Figure 3. Showing the difference between reported severity of flu like symptoms for families of employees that were either vaccinated or not vaccinated.

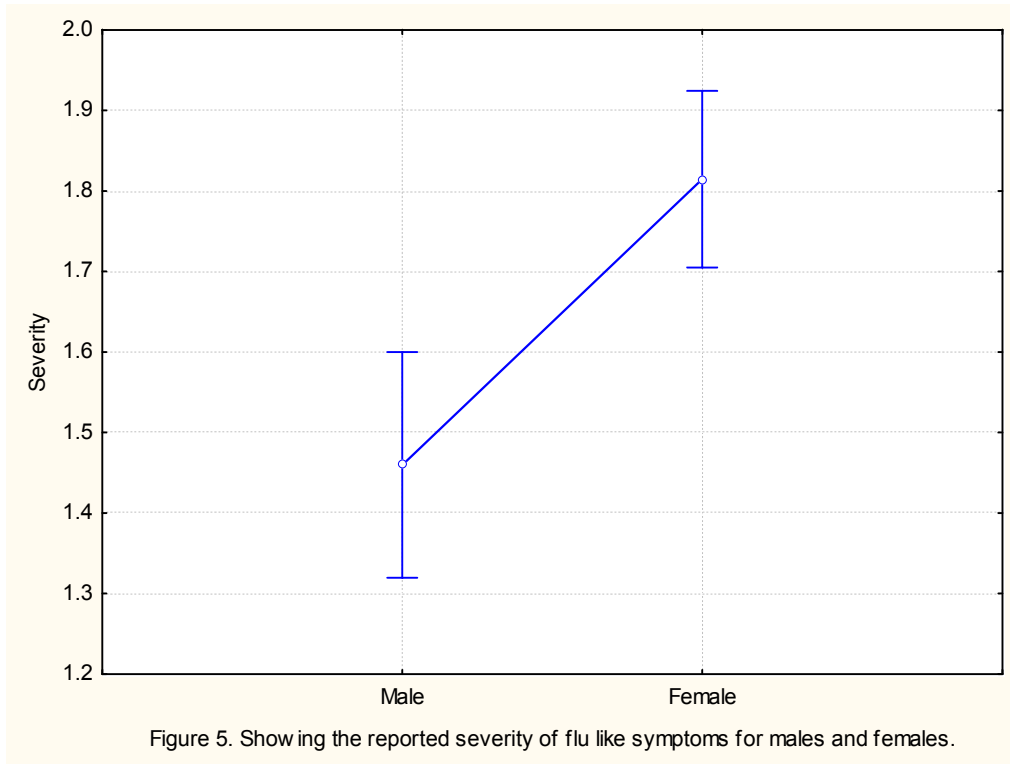
6. Severity Of Each Influenza Symptom For Families

The ANOVA also revealed a significant interaction effect between employees that were either vaccinated or non-vaccinated and how severe they rated each influenza like symptom in their families, $F(1, 1005)=15.316, p = .00010$. Post hoc analysis (Tukey Honest Test) revealed significant differences between ratings for Dry Cough, Exhaustion, Running Nose, and Sore Throat. As shown in Figure 4, these symptoms were more severe for employee families that were non-vaccinated.



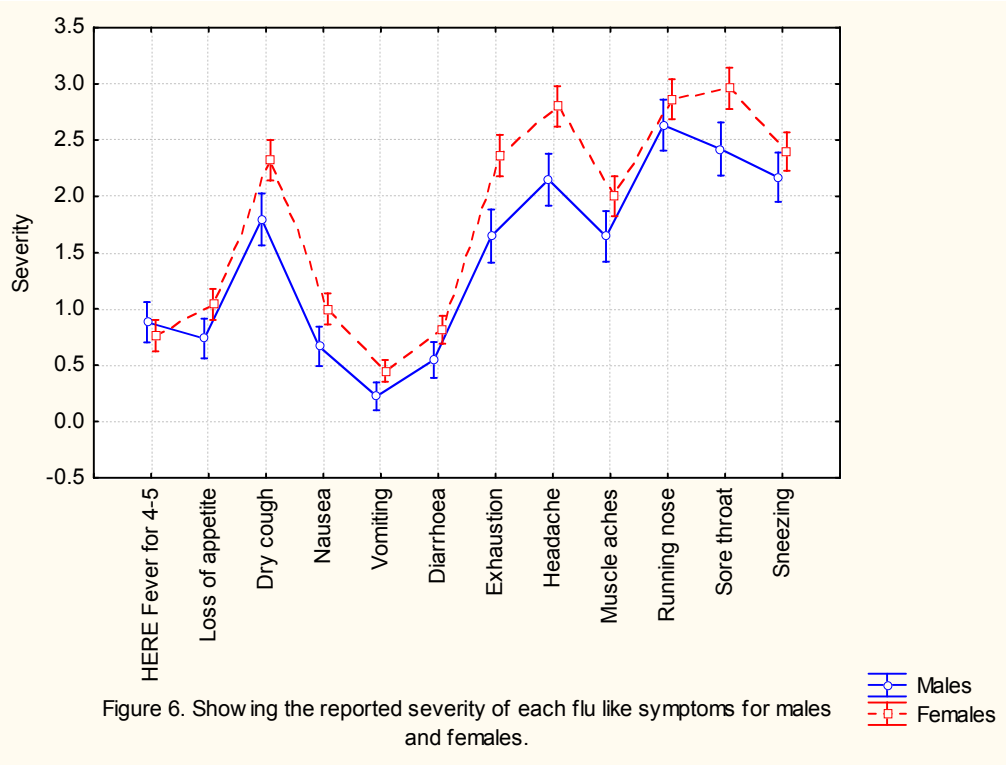
7. Employee Gender

Employee gender was also considered when analyzing the reported severity of the 12 influenza like symptoms. As shown in Figure 5, males rated the symptoms as being less severe than women did. When a 2 (employee gender) X 12 (symptoms) repeated measures ANOVA was performed, this difference was statistically significant, $F(1, 1005) = 15.312, p=.0001$.



8. Employee Gender And Severity Of Influenza Symptoms In Families

The ANOVA also revealed a significant interaction effect between employee gender how severe they rated each influenza like symptom in their families, $F(11, 11055) = 5.0723, p = .0001$. Post hoc analysis (Tukey Honesty Test) revealed significant differences between ratings for Dry Cough, Exhaustion, Headache, and Sore Throat. As shown in Figure 6, these symptoms were more severe for females.



9. Employee Gender and Days Off Work

When testing the number of days taken off from work, men reported taking fewer days off ($M = 1.592, SD = 1.917$) than women ($M = 1.932, SD = 2.24$). When an independent t -test was calculated, this difference was statistically significant, $t(1005) = -2.464, p = .013$.

10. Employee Age / General Health and Wellbeing / Days Off Work

The relationship between employees' age and their reported general health and well-being; as well as the number of days taken off work due to influenza like symptoms was considered. Statistically significant findings were found for both relationships. When a Pearson's product moment correlations were calculated, a very small significantly positive correlation was found between age and general health and well being ($r = .07, p < .05$); also, in regards to days off due to influenza like symptoms, a small negative correlation ($r = -.16,$

$p < .05$) was found. Compared to ratings from younger employees, older employees took fewer days off work and considered themselves healthier

11. Going To Work Sick

Employees were asked how often they went to work when they were sick. Employees were presented with a four-point scale that ranged from Never (1) to Only Rarely (2) to Sometimes (3) to Frequently (4). When an independent measures t -test was calculated, employees that were non-vaccinated went to work sick more often ($M = 2.62$, $SD = 1.058$), than employees that were vaccinated, ($M = 2.416$, $SD = 1.005$), $t(1005) = -3.316$, $p = .001$

12. Affected By A Sick Employee

When asked, however, whether their work performance was negatively affected by someone else at work, there was no difference between vaccinated employees ($M = 2.407$, $SD = 1.225$) and non-vaccinated employees ($M = 2.410$, $SD = 1.134$), $t(1005) = -0.04$, $p = .968$.