Vermont Mask Survey

Fall Report
October, 2020

vtmasksurvey.com

About the Author:

I appreciate your time and willingness to consider these concerns.

Evidence-Based Health Educator with experience with people of all ages and abilities, in numerous community settings.

Experience goes back to HIV/AIDS epidemic's early days.

At the forefront of addressing other sensitive subjects, such as sexual abuse and the effects of trauma.

Media Literacy educator.

Cost-Benefit or Cost-Effectiveness Analysis

We have to know the cost in order to be able to evaluate the effectiveness.
This survey is focused on gathering data about the cost.

Advice on the use of masks in the context of COVID-19

Interim guidance

5 June 2020

World Health Organization

If masks are recommended for the general public, the decision-maker should:

- continue gathering scientific data and evidence on the effectiveness of mask use (including different types and makes as well as other face covers such as scarves) in non-health care settings;
- evaluate the impact (positive, neutral or negative) of using masks in the general population (including behavioral and social sciences).

The Health Difficulties:

1. Headaches
2. **Difficulty Breathing**
3. Skin Irritation
4. Difficulty Communicating Clearly
5. Physical Discomfort
6. Mental/Emotional Discomfort
7. **Difficulty cleaning your hands every time you touch your mask**

Vermont Mask Survey

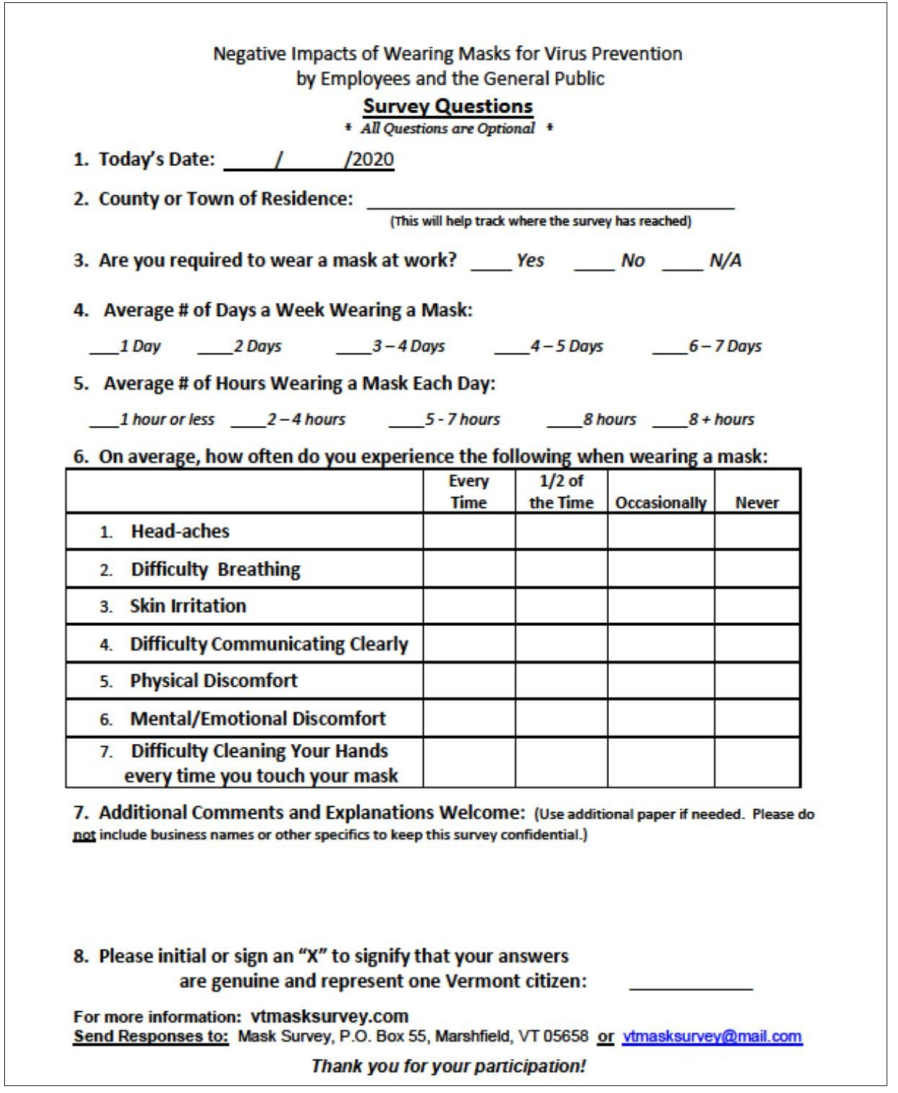
Started collecting surveys in July.

Solicited surveys through a statewide poster campaign.

Completed surveys were mailed in or emailed by the participants.

62 individual survey responses were received.

21 reported experiencing difficulties *every* time they wear a mask, 31 *occasionally*, and 10 *never*.



Negative Impacts of Wearing Masks for Virus Prevention
by Employees and the General Public

Survey Questions

* *All Questions are Optional* *

1. **Today's Date:** ____/____/2020
2. **County or Town of Residence:** _____
   (This will help track where the survey has reached)
3. **Are you required to wear a mask at work?** ____ *Yes* ____ *No* ____ *N/A*
4. **Average # of Days a Week Wearing a Mask:**
   ___*1 Day* ___*2 Days* ___*3 – 4 Days* ___*4 – 5 Days* ___*6 – 7 Days*
5. **Average # of Hours Wearing a Mask Each Day:**
   ___*1 hour or less* ___*2 – 4 hours* ___*5 - 7 hours* ___*8 hours* ___*8 + hours*
6. **On average, how often do you experience the following when wearing a mask:**

	Every Time	1/2 of the Time	Occasionally	Never
1. Head-aches				
2. Difficulty Breathing				
3. Skin Irritation				
4. Difficulty Communicating Clearly				
5. Physical Discomfort				
6. Mental/Emotional Discomfort				
7. Difficulty Cleaning Your Hands every time you touch your mask				

7. **Additional Comments and Explanations Welcome:** (Use additional paper if needed. Please do not include business names or other specifics to keep this survey confidential.)

8. **Please initial or sign an "X" to signify that your answers are genuine and represent one Vermont citizen:** _____

For more information: vtmasksurvey.com
Send Responses to: Mask Survey, P.O. Box 55, Marshfield, VT 05658 or vtmasksurvey@mail.com

Thank you for your participation!

Costs: Difficulty Breathing

All of the respondents in the first set reported experiencing difficulty breathing every time.

Type of Difficulty	**Every Time**	**½ of the Time**	**Occasionally**	**Never**	Total Responses:
Difficulty Breathing	21				**21**

Objective Assessment of Increase in Breathing Resistance of N95 Respirators on Human Subjects

HEOW PUEH LEE[1]* and DE YUN WANG[2]

Received 27 March 2011

. There was also an average reduction of 37% in air exchange volume with respirators. This is the first reported study that demonstrates quantitatively

Physiological Impact of the N95 Filtering Facepiece Respirator on Healthcare Workers

Raymond J Roberge MD MPH, Aitor Coca PhD, W Jon Williams PhD, Jeffrey B Powell MSc, and Andrew J Palmiero

tional Safety and Health Administration's ambient workplace standards. **CONCLUSIONS: In healthy healthcare workers, FFR did not impose any important physiological burden during 1 hour of use, at realistic clinical work rates, but the FFR dead-space carbon dioxide and oxygen levels were significantly above and below, respectively, the ambient workplace standards, and elevated P_{CO_2} is a possibility. Exhalation valve did not significantly ameliorate the FFR's P impact.** *Key words: N95 filtering*

CO_2 and O_2 values, respectively, over 1 hour, for the FFR (2.9%, 16.6%) and the FFR-with-valve (2.9%, 16.7%) did not differ significantly by work rate or FFR model, and are comparable to other studies.[18,24] Although the FFR V_D O_2 level was lower than the Occupational Safety and Health Administration's workplace standard (< 19.5% O_2 is considered deficient) and the FFR V_D CO_2 level was higher (< 0.5% CO_2 as an 8-h time-weighted average, is normal), these standards apply to the ambient workplace atmosphere, not to the FFR V_D. Nonetheless, breathing-environment CO_2 > 3% has been associated with detrimental physiological effects,[25] and prolonged breathing of CO_2 at greater than the atmospheric level can cause symptoms (eg, headache, anxiety, and confusion) and the additional physiological stress of compensatory mechanisms. Interestingly, we found no sig-

CO2 Level in Mask = 2.9%
OSHA Standard = Not More than 0.5%

Oxygen Level in Mask = 16.7%
OSHA Standard = Not Less than 19.5%

Blood-oxygen levels do not drop in most people because their bodies will "borrow" the oxygen from their organs and tissues.

RESEARCH Open Access

Respiratory consequences of N95-type Mask usage in pregnant healthcare workers—a controlled clinical study

Pearl Shuang Ye Tong[1], Anita Sugam Kale[1], Kailyn Ng[1], Amelia Peiwen Loke[1], Mahesh Arjandas Choolani[1], Chin Leong Lim[2], Yiong Huak Chan[3], Yap Seng Chong[1], Paul Anantharajah Tambyah[4] and Eu-Leong Yong[4*]

Conclusions: Breathing through N95 mask materials have been shown to impede gaseous exchange and impose an additional workload on the metabolic system of pregnant healthcare workers, and this needs to be taken into consideration in guidelines for respirator use. The benefits of using N95 mask to prevent serious emerging infectious diseases should be weighed against potential respiratory consequences associated with extended N95 respirator usage.

Pregnant women are more likely to experience a drop in blood-oxygen levels.

The Effects of Restricted Breathing

The immune response to resistive breathing

T. Vassilakopoulos, C. Roussos, S. Zakynthinos

Resistive breathing is encountered in many disease states, such as asthma and chronic obstructive pulmonary disease (COPD). Asthma and COPD are associated with significant airway inflammation, with elaboration of various cytokines within the airways. When strenuous enough, inspiratory resistive breathing produces diaphragmatic fatigue [1] and diaphragmatic structural injury [2, 3]. In this report, the

45 min at 75% of their maximum inspiratory pressure

Pre-Existing Conditions

"When I have to wear a mask for a longer time (more than 15 minutes), like when grocery shopping, working, hair cut, my heart condition that I had been able to control the past two years with diet and exercise starts to come back. I'm worried this will come back permanently."

Are health care providers monitoring their patients with pre-existing conditions who complain about mask-use?

Pre-Existing Conditions:

Not Accessing Essential Services

"I have PTSD and it causes me great distress wearing a mask. I am upset about the mask mandate because businesses decline my entry and it makes it harder to get my daily needs done. I don't have a car and the bus requires a mask so I have to walk everywhere."

"I apologize for this poorly filled out survey. I cannot wear a mask so I don't have access to printing services because the library where I go for printing doesn't allow entry without a mask."

"Not leaving the house because of the mask situation.

Exemptions

STATE OF VERMONT

EXECUTIVE DEPARTMENT

ADDENDUM 2 TO AMENDED AND RESTATED EXECUTIVE ORDER NO. 01-20

Nothing in this Order or any other State health and safety guidance shall require the use of a mask or cloth facial covering when someone is engaged in strenuous exercise or activity, for anyone under the age of 2, any child or adult with a medical or developmental issue or challenge that is complicated or irritated by a facial covering, anyone with difficulty breathing or as further set forth in guidance issued by VDH.

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major article

Physiologic and other effects and compliance with long-term respirator use among medical intensive care unit nurses

Terri Rebmann PhD, RN, CIC[a,*], Ruth Carrico PhD, RN, CIC[b], Jing Wang PhD[c]

Inclusion criteria included nurses working in the University of Louisville Hospital medical intensive care unit (MICU) who are nonsmokers (defined as having never smoked or not smoked in the last year), 20 to 50 years old, not pregnant, and able to pass quantitative fit testing. Exclusion criteria included any medical or physical symptom/condition that could potentially put subjects at risk from prolonged N95 use, including pregnancy, arrhythmias, hypertension, poorly controlled asthma, history of panic attacks or claustrophobia, and/or seizure disorder. Quantitative fit testing was conducted on all potential subjects prior to study enrollment; only those who passed fit testing were enrolled. Ten subjects were enrolled.

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you've ever felt wearing an N95. Subjective symptoms related to wearing an N95 included nausea, headache, light headedness, visual difficulties, shortness of breath, palpitations, confusion, and difficulty communicating; these variables were assessed using the

Most nurses (90%, n = 9) tolerated the use of respiratory protection for 2 full 12-hour shifts. Only 1 (10%) withdrew because of unwillingness to continue wearing respiratory protection; this subject wore it for approximately 30 minutes before withdrawing from the study. Of the nurses who participated in the entire study,

Exemptions:

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Interim guidance

5 June 2020

World Health Organization

The likely disadvantages of the use of mask by healthy people in the general public include:

disadvantages for or difficulty wearing them, especially for children, developmentally challenged persons, those with mental illness, elderly persons with cognitive impairment, those with asthma or chronic respiratory or breathing problems, those who have had facial trauma or recent oral maxillofacial surgery, and those living in hot and humid environments.

UNITED STATES DEPARTMENT OF LABOR

Occupational Safety and Health Administration

- May be used by almost any worker, although those who have trouble breathing or are otherwise unable to put on or remove a mask without assistance should not wear one.

Costs: Increased Infection

Difficulties washing hands was experienced by more survey respondents than any other issue, suggesting that proper hand hygiene is rarely able to happen in community settings.

Type of Difficulty	**Every Time**	**½ of the Time**	**Occasionally**	**Never**	Total Responses:
Difficulty Cleaning Your Hands every time you touch your mask	14	4	24	9	**52**

BMJ Open

A cluster randomised trial of cloth masks compared with medical masks in healthcare workers

Received 9 September 2014

Conclusions: This study is the first RCT of cloth masks, and the results caution against the use of cloth masks. This is an important finding to inform occupational health and safety. Moisture retention, reuse of cloth masks and poor filtration may result in increased risk of infection. Further research is needed to inform the widespread use of cloth masks globally. However, as a precautionary measure, cloth masks should not be recommended for HCWs, particularly in high-risk situations, and guidelines need to be updated.

Centers for Disease Control and Prevention

CDC 24/7: Saving Lives, Protecting People™

Educate patients, visitors, and HCP about the importance of performing hand hygiene immediately before and after any contact with their facemask or cloth face covering.

Don't put the mask around your neck or up on your forehead

Don't touch the mask, and, if you do, wash your hands or use hand sanitizer to disinfect

Take Off Your Mask Carefully, When You're Home

- Untie the strings behind your head or stretch the ear loops
- Handle only by the ear loops or ties
- Fold outside corners together
- Place mask in the washing machine (learn more about how to wash masks)
- Be careful not to touch your eyes, nose, and mouth when removing and wash hands immediately after removing.

Costs: Extended Use

66% of respondents who have difficulties *every time* reported that they are required to wear a mask at work.

Over half of those wearing them for work wear a mask 5 or more days a week, and between 5 and 8+ hours each day.

Of Those Wearing a Mask at Work, How Many Days per Week:

Days a Week	# of Respondents
2 Days	1
3 – 4 Days	2
4 – 5 Days	9
6 -7 Days	2

Of Those Wearing a Mask at Work, How Many Hours per Day:

Hours Each Day	# of Respondents
2 – 4 Hours	2
5 – 7 Hours	4
8 Hours	3
8+ Hours	5

The Physiological Burden of Prolonged PPE Use on Healthcare Workers during Long Shifts

While every HCW should be medically cleared before wearing respiratory protection, there are still many factors that can exacerbate the PPE burden, including obesity, underlying respiratory conditions (asthma, allergies, COPD, etc.), and smoking. HCWs should be provided regular opportunities to take breaks and a supportive environment to report symptoms related to their PPE use. For example, using an FFR for an extended period may cause dizziness (as well as other symptoms), which could compromise the worker, workplace, and patient safety. Dizziness is an important warning sign, as it can be caused by dehydration, hyperventilation (gasping for breath), elevated carbon dioxide [CO_2] levels in the blood, low blood sugar, and anxiety, among other things.

"*I have breathing issues and get very light headed due to wearing a mask*."

- Survey respondent

What Can We Do?

Respect exemptions for people who need them.

Educate about proper mask use. *(Hand hygiene, wash face after use.)*

Make sure wearers are taking frequent “breath breaks.”

<u>Be alert to and ready to treat:</u>

- Breathing difficulties
- Allergic reactions
- Maskne *(rashes and breaks in the skin)*
- Dehydration
- Effects on pre-existing conditions *(current/former smoker, obesity...)*

<u>Ripple Effects:</u>
supplies, poverty, lack of health monitoring

For More Information:

Survey and report can be found at: vtmasksurvey.com

Email: vtmasksurvey@mail.com

Cited article by the author:

https://www.802freedom.com/post/vermont-mask-survey-shows-evidence-of-health-risks

Interview with *Vermont Independent*:

https://www.youtube.com/channel/UCHXMiUoEfrGyktUzzu9MBWA

Interview with *Conversations with Vermonters*:

https://www.youtube.com/user/allisone1951

Thank YOU for being Super Heroes!