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Simple Way to Make Homemade Cloth Masks: Fabrics Treated with NaCl and Starch Solution

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Coronavirus Method Development Community



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ABSTRACT

This protocol describes a simple way to make a mask at home using the cotton or linen woven fabric available in wearable cloth or household napkin. Fabric is soaked in a solution containing the table salt (NaCl) and starch. Starch is used to increase the droplet absorption efficiency of fabric whereas salt is added for improving the virus deactivation system. These simple preparation and wearing techniques will help anyone to prepare a mask for safety during COVID-19 pandemic, especially for those people having masks of little avail or no avail.

GUIDELINES

1. Wash hands for at least 20 seconds with soap before removing or wearing the mask.
2. Clean with hot water to reduce starch content before reuse or reactivation.
3. Knot up two sides of folded cloth. Tight it as you like to ensure good breathing and no loose-fitting.
4. It can be reused also without further salt-starching treatment of the fabric.
5. Avoid salt-starching treatment on rainy days.

MATERIALS TEXT

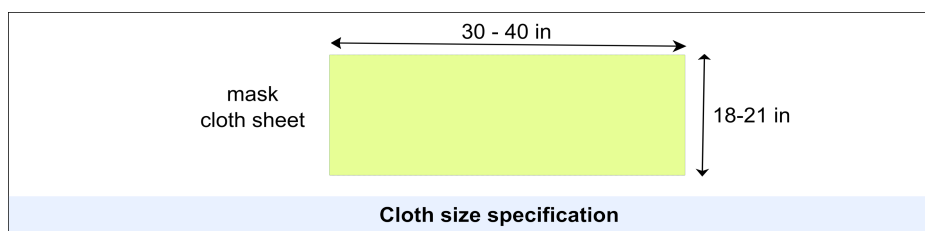
- Cotton woven fabric or similar cloth/napkin piece.
- Scissors and sewing machine.
- Liquid starch from cooked rice or laundry starch powder.
- Hot water.
- Laundry iron.

SAFETY WARNINGS

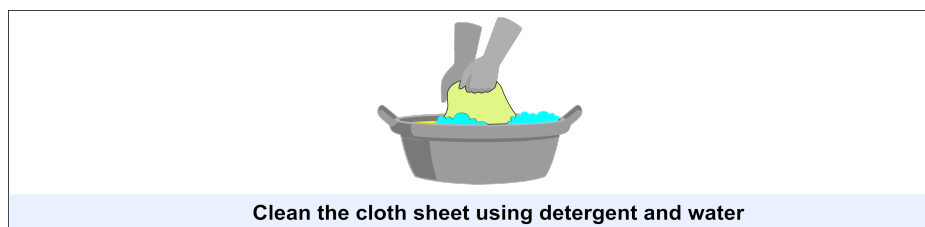
1. This mask is not suggested for children.
2. Maximum use is 5-6 hours in a day.
3. Decontaminate the used cloth mask immediately by cleaning with soap/detergent (or placing it in boiling water for 10 minutes).
4. Reuse it after dry or reactivate the mask again following Step -2 to Step -5.

Step by Step

- 1 **Cloth size specification:** Cut out a piece of rectangular cloth sheet for a mask (width from 18 to 21 inches and length from 30 to 40 inches) from a cotton/linen woven cloth/napkin fabric. Fold over all sides $\frac{1}{4}$ inch and stitch down.



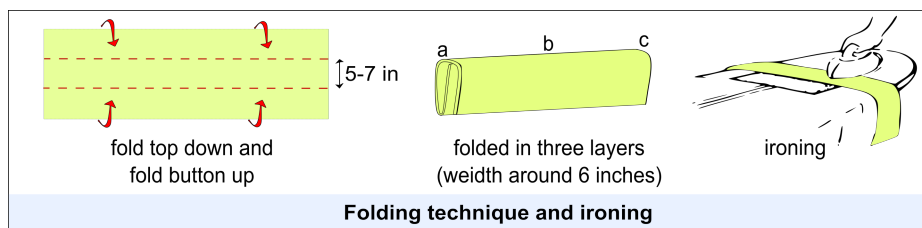
- 2 Clean the cloth sheet for the mask with a normal detergent or soap.



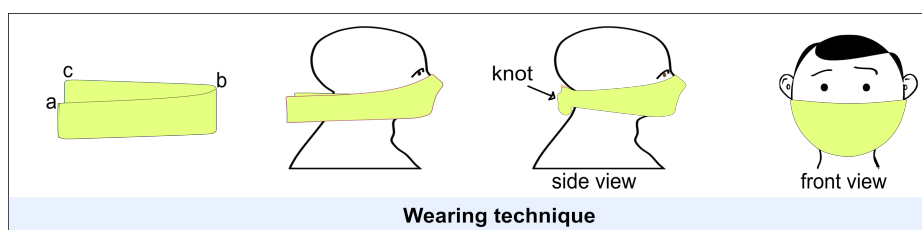
- 3 **Salt-starching technique:** For the salt-starching treatment of the cloth sheet, prepare a solution made up of $\frac{1}{2}$ cup liquid starch (homemade or laundry liquid starch), 1 spoon table salt (NaCl), dissolved in 1.5 to 2-liter hot water. For good smell add 1 or 2 drops essential oil. Soak cloth sheet properly in a bowl containing the hot salt-starch solution. This prepared solution is enough for salt-starching on 4 to 5 mask cloth sheets. Press out all unabsorbed solution off the cloth sheet. Hang it outside under the sun to dry. In rainy days no salt-starching is suggested.



- 4 **Folding technique:** Fold the cloth piece to make three layers with a width of 5-7 inches depending on one's face shape to cover nose up to lower chin. For less fiber-containing cloth, the layer can be increased by fixing the width before cutting the cloth sheet. In the folded layer sheet two sections are now defined as mid-section ('b') and end-section ('a' and 'c'). Iron the folded fabrics.



- 5 **Wearing technique:** Place the folded mask cloth sheet around the face in a way that mid-section ('b') of the cloth sheet covers the nose, mouth and lower chin properly. Place two end-sections ('a' and 'c') of the cloth sheet back of the head and hold them moderate tight before making a knot at the back of your head. Other modifications such as the use of buttons may also be adopted to avoid knot style.



- 6 **Sterilize & Reactivation:** Place in boiling water for 10 minutes to sterilize and reduce the starch content. Reuse it after dry or reactivate continuing Step -2 to Step -5.



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