

A 'Universal Droplet Reduction Model' to Lower Contamination against Pandemic



homemade
facemasks

Use of Household Textiles

To cut environmental contamination by 97%

March 25, 2020. Rodriguez-Palacios A. et al. under review.

COVID-19



cover
surfaces

1. Cut FACEMASK



Materials needed:

- one 100% cotton t-shirt
- scissors
- 2 paper clips or hair ties
- pen or marker
- ruler/measuring tape
- a flexible metal wire (e.g., food tie, paperclip, or nose band from a surgical mask).
- Needle and thread



Studies showed that 2-layers of textile (cotton t-shirt, or sports jerseys) material work very well reducing environmental contamination by 90-98%

Rodriguez-P. March 26, 2020. under review

Step 1: Lay the shirt out flat.



Step 2: Fold the bottom of the t-shirt up and over on top of itself (so the inside of the shirt is now on the outside)



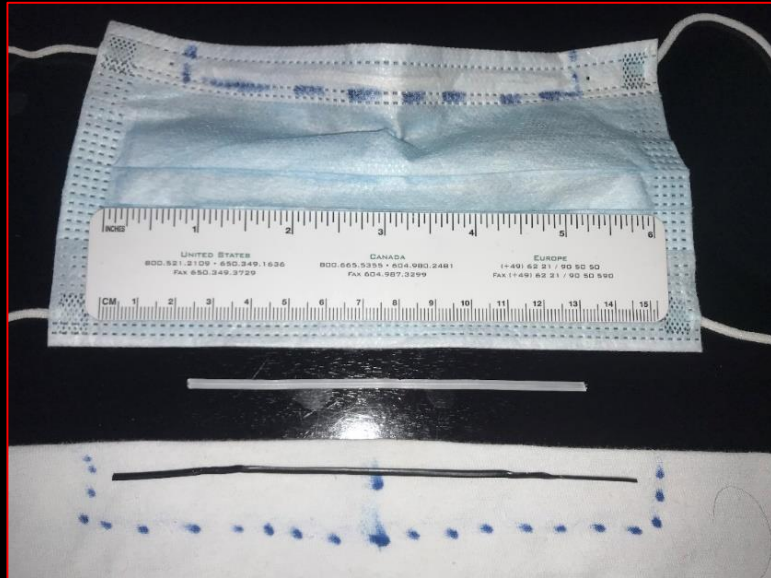
Step 3: Cut across the width of the shirt so that you have one long strip of t-shirt.



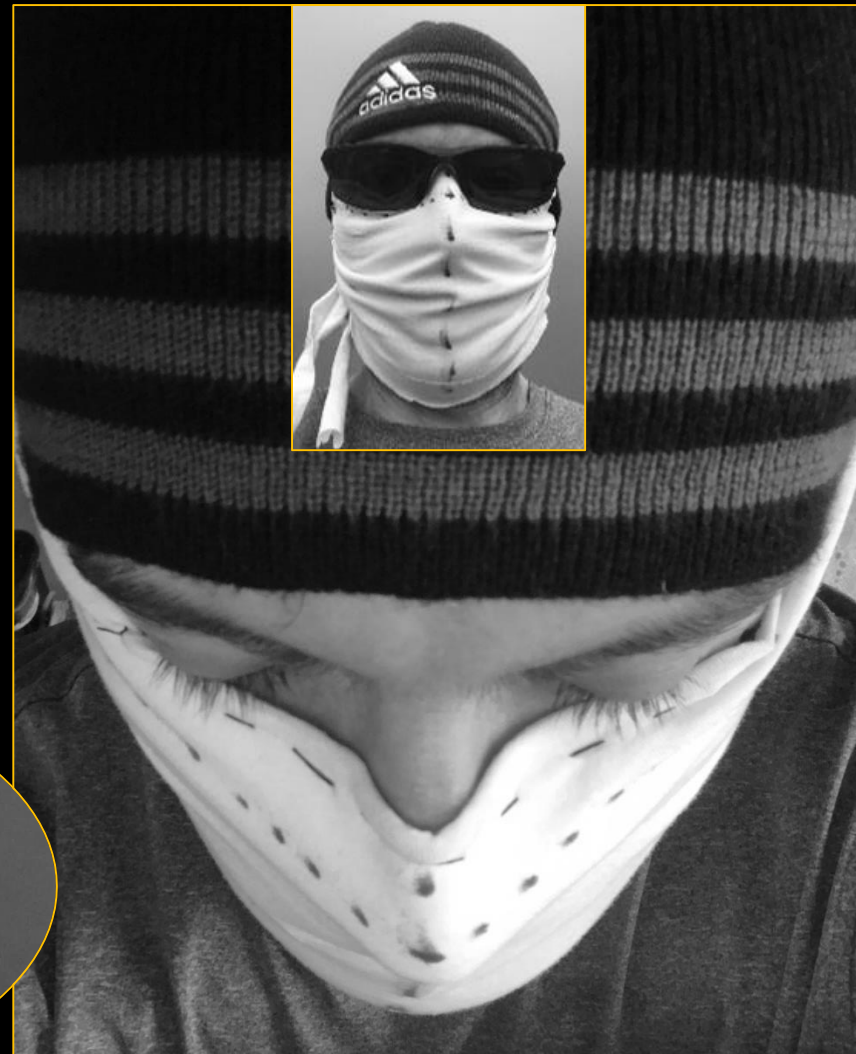
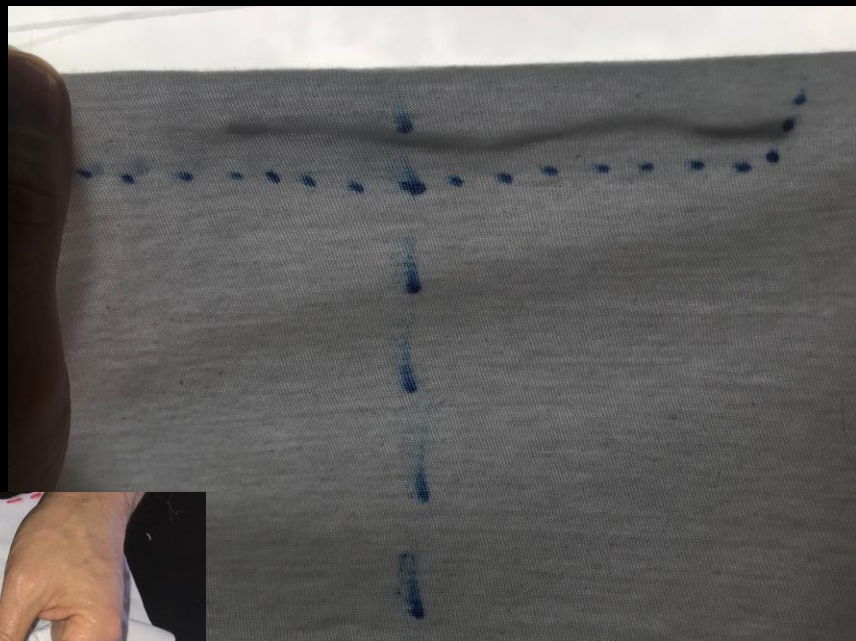
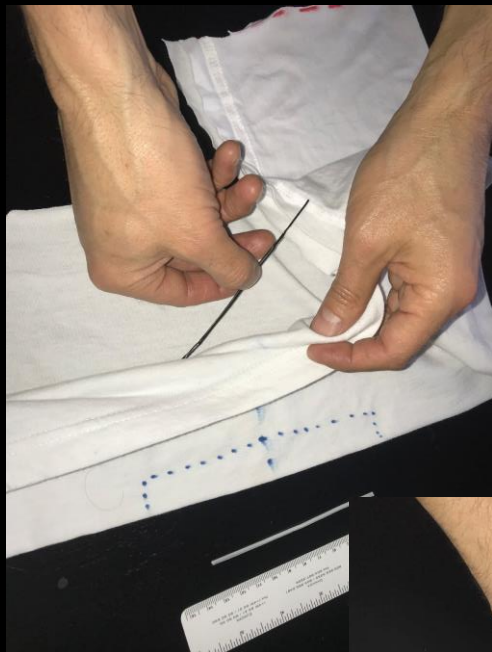
one long strip of t-shirt.



Step 4: Draw a dotted line down the center of your long piece of fabric. Above this center line, draw a rectangular box along the top edge of the fabric (it will look like a 'T').



Step 5: Place your flexible metal wire in between the two layers of fabric (within your rectangular box). Then, sew along your rectangular dotted line so that the metal wire will stay in place.



Step 7: Use a large safety pin to group the fabric on each side of the mask. You can also use hair ties to “bunch” the fabric on each side.



Step 8: Tie the mask around your face.



Wash face after mask use

Clean/wash the mask after every use/daily

Use any of the following:

- Ethanol-based spray
- Diluted bleach solution
- Soap & Water



2. SCARFS/OTHERS as FACEMASK

alternate textile/cloth
options to prevent
respiratory droplets
contamination



Alternate 1: By folding a sweater/shirt

Step 1



Step 2



Step 3



Step 4



Alternate 1: By folding a sweater/shirt as shown, using the hoodie/for hair cover

Step 1



Step 2



Step 3



Alternate 2: Other types of shirts or textiles as scarfs



Consider reducing exposure and cover high-risk surfaces – regular cleaning/disinfection



KEEP THE RESPIRATORY DROPLETS TO YOURSELF_{arp}

WEARING HOMEMADE TEXTILE FACEMASKS/SCARFS/BARRIERS

WILL REDUCE THE CONTAMINATION OF THE ENVIRONMENT

WITH INFECTIOUS RESPIRATORY DROPLETS.

DO NOT USE MEDICAL MASKS, AS THEY ARE NEEDED BY DOCTORS



Shoppers line up with full carts in a supermarket in Virginia on March 13, 2020.

Daniel Slim/AFP via Getty Images



Rodriguez-Palacios, A. *et al.* March 26, 2020

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