Make masks at home with cotton and silk

Across the world, the coronavirus (COVID-19) pandemic has forced governments into mandating the use of face masks. The general public has been advised to use cloth masks and not hoard N95 and surgical masks which are reserved for the healthcare workers.

Cotton and Chiffon

- The number and size of particles in air were measured before and after passing through the fabric. One layer of cotton along with two layers of chiffon showed the highest filtration efficiency of 97%.
- The researchers point out that the tightly woven cotton can act as a mechanical barrier to the aerosols and the chiffon serves as an electrostatic barrier.
- “As kids, we used to do this experiment where we would rub a comb on our dry hairs to lift small pieces of paper. Electrostatic filtration effectively works on the same principle. Some fabrics such as natural silk and chiffon can hold static charges.
- When small particles come in close proximity to these fabrics, they are attracted and trapped inside them, thus acting as filters.

Condition

- However, even a small 1% gap in the mask drastically reduced its efficiency.
- The importance of a good fit needs to be emphasised. Even for a mask as good as an N95 mask, the filtration efficiency can drop significantly if they are not properly worn.