SHOULD WE BE PROTECTED FROM PATHOGENS OR SURGICAL MASKS DURING PANDEMIC PERİODS?

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SUMMARY

With the pandemic period we are in, the use of masks has become mandatory. They are the most widely used surgical masks. The purpose of use of these masks is to filter the air we breathe from bacteria and viruses. These masks are made by combining very thin, micron-sized plastic fibers in the form of fabric. When these plastic fibers are moist, they create a habitat for bacteria to grow. The mask we wear to protect us from pathogens becomes a breeding ground and creates a more dangerous situation.

GOAL

The main purpose of this project is to change the structure of surgical masks, to show how a new type of mask can be produced without the use of chemicals, on which bacteria and viruses cannot live, and that it is biologically possible. We worked on how a reliable mask should be.

METHOD

Surgical masks are made of plastic fibers and do not have antibacterial properties. The use of masks can be made safe by mechanically imparting antibacterial properties to the fabric used in mask making, without using chemicals. The solution is reached when the Sharklet ® pattern is processed on the plastic fibers used in mask production.

FINDINGS

As a result of the misuse of surgical masks during pandemic periods, situations that threaten our health arise. Surgical masks not only create a habitat for bacteria, but also become a source of microplastics and cause microfibers to be inhaled into our lungs. These microfibers are also the habitat for bacteria inside the lungs. The micro-pattern on the shark's skin has been copied by biomimicry and has been synthetically produced and proven by scientists to have antibacterial properties. As a result of the experiments; Using the Sharklet® pattern is an effective and attractive method to greatly reduce microbial contamination on surfaces without the use of antimicrobial agents (substances). The data presented in this study show that micropatterned surfaces clearly reduce microbial adhesion and transfer when compared to the same material without the micropattern.

CONCLUSION

As a result, the use of surgical masks leads to other health problems while trying to be protected from pathogens. It has the potential to cause many diseases caused by bacteria. In order to prevent this situation, the masks should be antibacterial. It is possible to make an antibacterial mask mechanically, without the use of chemicals. The solution is reached by processing the Sharklet ® pattern, which is made by bioimitation from shark skin, which has antibacterial properties, into the microfibers in the structure of the mask. While athletes pay attention to their health and use Sharklet® patterned yoga mats, why not have these micro-patterns on masks that are a part of our lives today? Masks that will be produced by processing this pattern will make our lives easier and mean less worrying about microplastics and microorganisms. These patterns should be embroidered on the fabrics for which masks will be made