

**Орищук Єва Сергіївна**

Київський національний університет технологій та дизайну

(м. Київ)

Науковий керівник – к.ф.н., доц. Сиромля Н.М.

## **THE HIDDEN HAZARD OF WET WIPES**

Hygiene of hands is very important today. Our hands are one of the main ways to interact with the environment. Just think about how many items you touch every day – doors, tables, food, pets and how many microbes and viruses are on them. Today there are a lot of tools that help fight bacteria. One of them is wet wipes. Antibacterial wet wipes are universal – not only are they easy to carry around in your pocket or handbag, they are used to wipe children's hands, clean kitchen counters and, most importantly, sterilise equipment and surfaces in hospitals. Antibacterial cleaning wipes are everywhere, but are they harmless? Unfortunately, for most popular versions, that's not the case.

The aim of our paper is to study the effects of wet wipes on human health and the environment.

The first wet wipes appeared in the early 1970's. But they were far from perfect: in quality they resembled the usual paper napkins imprinted with a bactericidal solution. Accordingly, they had a lot of disadvantages: they tore off, quickly dried up and were not enough soft and strong. The fundamental changes in quality occurred after the manufacturers abandoned cellulose in favor of synthetic fibers and switched to non-woven materials that were in no way inferior to the natural softness, but had a great absorbing ability. And perfection of lotions and aromas allowed to make napkins more functional [2].

Experts argue that some substances that are part of the moisture can be harmful to the human body. For example, monopropylene glycol is an organic solvent that can cause allergic reactions and irritation, the formation of acne, and if accumulated in the body at a high dose, it affects the work of the liver and kidneys, causes nervous disorders. Parabens – petroleum products, accumulate in the body, violate the

hormonal background and increase the risk of breast cancer. Alcohols adversely affect the skin and cause irritation and allergic reactions. Mysterious mixtures that provide an aroma explosion can contain hundreds of untested chemicals such as phthalates and synthetic musks – both suspected hormonal malfunctions. Scents are also among the top five allergens worldwide.

Recently, researchers from the Welsh School of Pharmacy at Cardiff University in Wales found that the use of wipes in hospitals may actually be spreading deadly bacteria, including the Methicillin-resistant type known as MRSA.

They tested the cleaning power of three different types of antibacterial wipes containing either traditional disinfectants, detergents or natural antimicrobial substances, such as those extracted from plants.

A team led by microbiologist Gareth Williams used the wipes to clean surfaces that had been severely contaminated with the notorious bacterium *Staphylococcus aureus* — including MRSA, which has become a growing concern in hospitals.

The study found that natural antimicrobial wipes removed the most bacteria from surfaces, while disinfectant wipes did the best job of destroying bacteria.

But researchers found that all of the dirty wipes, including those with the disinfectant, still had some bacteria remaining on them. When they were reused, the wipes just transported the bacteria to another location. "We would recommend that one wipe is applied in one application to one surface, and then discarded. This is in an attempt to prevent the transfer of bacteria to different surfaces», Williams said [3].

The American Medical Association discourages the use of antibacterial agents in consumer products because they may encourage the development of «superbugs» - antibiotic-resistant bacteria.

The Association of Occupational and Environmental Clinics, a leading international authority on asthma, considers these chemicals to be «asthmagens» - substances that can cause asthma to develop in otherwise healthy people. It makes sense to avoid unnecessary exposures to asthma-causing chemicals, especially for kids [4].

In addition to human health, wet wipes damage the environment, causing environmental chaos. Wet wipes contain plastic fibers that are not biodegradable. For example, when napkins fall into the ocean, they are eaten by sea creatures such as turtles who consider them jellyfish and die in the rest. Napkins are washed away from beaches around the world. According to MCS estimates, in 2014, the beach had approximately 35 napkins in the UK – 50% more than in 2013. Also there is a clogging of toilets and sewers. Many users mistakenly throw away wet wipes in the toilet, thus clogging the sewer. According to Guardians, residents of a small town of Kent were buried in a sewer age of 2000 tons of wet wipes. When clogging the sewers with damp napkins, there is accumulation of fat. In 2013, a piece of frozen fat was found in the sewage system in London [1].

In conclusion we analysed how wet wipes affect human health and the environment. To summarize, wet wipes are a popular means of hygiene. They will help you in travelling, walks or trips to remove visible dirt, but they will not save your hands from bacteria and infection. Experts recommend using wet wipes only in extreme cases, when you are away from soap and water. It must be remembered that regular hand washing, with ordinary soap, is the best way to fight germs and avoid getting sick.

#### REFERENCES

1. Влажные салфетки создают больше вреда, чем пользы // [Electronic resource] / Access mode: <http://ecology.md/page/vlazhnye-salfetki-sozdajut-bolshe-vreda-chem-polzy>
2. Эволюция влажных салфеток // [Electronic resource] / Access mode: [https://glorymix.ua/index.php?route=journal2/blog/post&journal\\_blog\\_post\\_id=8](https://glorymix.ua/index.php?route=journal2/blog/post&journal_blog_post_id=8)
3. Allyson T. Collins Disinfecting Wipes May Spread, Not Kill, Germs // [Electronic resource]/Access mode:<https://abcnews.go.com/Health/Germs/story?id=4989093&page=1>
4. Don't wipe up: the dangers of antibacterial wipes // [Electronic resource] / Access mode: <https://www.ewg.org/enviroblog/2012/09/dont-wipe-out-hidden-hazards-antibacterial-wipes>.