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Letter to the Editor

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Sleep and social life in healthcare professionals

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Dear Editor,

In a recently published paper in Royal Society Open Science, Sundelin et al.[1] showed that people who had slept a sufficient period of time in two consecutive nights (mean of seven and a half hours) looked more attractive. Conversely, people who had an insufficient amount of sleep (mean of four hours) were considered less attractive and less healthy. As pointed out in previously published studies,[2] and reinforced by the paper of Sundelin and colleagues, results regarding the human face have important social implications, since sleep deprived people have less chances of social interactions.

I am of the opinion that Sundelin and colleagues' results have significant consequences for healthcare professionals and their patients, in addition to those discussed in their article.

Healthcare professionals are commonly associated with shift work and sleep deprivation and are advised to rest during night shifts, mostly because of the increased potential of failing to properly execute their work.[3]

What about the balance between work and social life? Healthcare professionals that have shift-based work struggle to maintain a personal and family life.[4] In view of Sundelin and colleagues' results, one can wonder if this equilibrium could be even aggravated not only because of the shift patterns but also because of facial changes caused by sleep deprivation that hinders social interactions. Could a nap during night shifts also improve healthcare professionals' quality of life by ameliorating their social life? Work/life balance may be even harder for female healthcare professionals,[4] not only because of child care commitments but also because females may have an increased difficulty concentrating and memorizing due to sleepiness compared to males.[5]

Interestingly, the study of Sundelin and colleagues did not show differences regarding perceived trustworthiness between sleep deprived and non-deprived people. Literature demonstrates a positive relationship between trust and quality of care.[6] Could one suggest that the absence of facial signs of untrustworthiness can counteract the facial effects of sleep deprivation in such a way that healthcare professionals continue to be able to maintain a good doctor-patient relationship despite sleep deprivation?
If one desires to be a healthcare professional that looks (and is) healthy, attractive and satisfied with his/her life, one must never forget to rest.

Sincerely,

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New medicines: The bleachers of bruises, blue nails, hematomas, blood stains and bloody crusts

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Dear Editor,

Water, hydrogen peroxide and sodium bicarbonate are widely used in medicine as detergents, antiseptics and disinfectants for the treatment of purulent wounds. However, previously these ingredients were not included in medicines designed for treatment of discoloration of liquid and solid blood, bloody crusts, bruises, hematomas and blue nails. It is shown that hydrogen peroxide together with sodium bicarbonate provide water with new biological activity, namely the ability to bleach the skin in the area of bruises, blood inside the hematomas in the skin and under the nail as well as blood stains on the body surface, on clothes and on different articles.[1-3] In addition, it was found that an aqueous solution of hydrogen peroxide and sodium bicarbonate is a good solvent for dried blood. We found that the introduction of a large amount of sodium bicarbonate powder into water which contains 0.1–3.0 per cent hydrogen peroxide turns it into a new medical drug.

The results of the experiments have shown that none of the studied ingredients can quickly dissolve and discolor blood and bruises if applied separately. The combination of sodium bicarbonate, hydrogen peroxide and water in certain ratios allowed us to invent bruise bleacher, bleaching agent, agent for intradermal bruise whitening and many other cosmetics uses and hygiene technologies for medical and household applications.[4,5]

It is shown that when a solution of 10 per cent sodium bicarbonate and 3 per cent hydrogen peroxide is introduced into bloody tampons, it begins to discolor them immediately. After 10–15 seconds all the tampons lose their red color and become colorless.

The results of our experiments showed that diluting this concentrated solution with water for injection 3–5 times allows us to obtain the drug, suitable for the immediate treatment of discolored skin in the bruise area.

The mechanism of action of the developed drug is as follows: special local physical-chemical activity is of the greatest importance. The fact is that the composition provides an optimal and safe solution alkalinity between pH 8.4 and alkaline buffering at high penetrating ability. It is an effective dermal and intradermal method which has detergent and whitening effect. It turned out that the proposed composition has a unique physical-chemical and biological activity, so it can be a substitute for bubbly shampoo.

It cleanses the skin effectively. Moreover, an alkaline aqueous solution of hydrogen peroxide quickly dissolves dried blood, and at the same time quickly discolors it. In this case, oxygen is released from water under the action of catalase from hydrogen peroxide, which is an oxygen salt. The catalase is found in the blood. The release of gas in solution forms bubbles and foam. Foam appearance is explained by the fact that dissolved blood gives the solution colloidal properties and increases surface activity. The substance quickly penetrates into the skin, and transforms its undissolved subcellular structures, including hemoglobin. Then, in dissolved form, it captures them and moves them into the tissues under the skin, i.e. subcutaneous fat and/or in the lymph and blood in the absorption process.

We discovered that a solution 10 per cent sodium bicarbonate and 3 per cent hydrogen peroxide was used for removal and bleaching of bloody crusts from skin with a gauze tampon. It is shown that this technology provides removal of dried blood stains within 5 seconds from the moment when we started wiping the skin.

Finally, in simulated conditions and in clinics, we conducted studies with artificial blood clots inside vascular and vein catheters. The results showed that the solution of 4 per cent sodium bicarbonate with traces of hydrogen peroxide at a temperature of +42°C completely dissolves blood clots after 1–3 minutes of continuous interaction.

To date, we have received evidence of very high bleaching efficiency of the alkaline solution of hydrogen peroxide in "blue nails" and even in "black nails". This allowed us to develop several cosmetic products and techniques of bleaching hematomas under the nail plate.

Sincerely,
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