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Short Communication

The lightness distribution of the red color for the nail plate related to human healthy level

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Abstract

The water content of the human nail plate may be a health indicator related to human beings. In Chinese traditional medical science, the traditional Chinese medicine physician usually examines the nail plate conditions combined with other body physical symptoms to determine the physical health level. Usually, for people with healthy bodies, the nail plates appear shining pink color.

On the other hand, people get ills, their nail plates will appear in different colors except for shining pink color nail plates. The pink color nail plates have come from the red blood flowing through the body capillaries. A healthy people, the blood flow through capillaries should be very smooth. Obviously, the capillaries inside the human nail plates with a smooth flow of blood will cause the human nail plates to appear pink in color.

Inspect the lightness distribution of the digital photo red color for the human nail plates only, a very clear result can be seen from the lightness distribution. The lightness distribution of the red color of the digital photo from the healthy human nail plate is wider than the lightness distribution of the digital photo from the dry nail plate.

Preface

S. Suguna, K. Hemanandhini, and H. Salome Hemachitra [1] detected the nail peculiarities by using nail image processing techniques. Wen-Li Ou [2] tried to determine normal and dry nails by checking the red colors of the human nails. Monika Gniadecka, Ole Faurskov Nielsen, Daniel Hojgaard Christensen, and Hans Christian Wulf [3] did the study of the water content in the Skin, Hair, and Nail. Michael W. Cashman and Steven Brett Sloan studied the relationship between nutrition and nail disease [4].

Manipulate digital numerical photo

The general digital numerical photo under the same lighting system and the same environment condition, one can have pictures like the left picture of Figure 1. We used the commercial picture manipulation software Photoshop to crop the picture to a rectangle in the middle figure shown in Figure 1. Then crop the middle figure to a small square sampling area as in Figure 1 right part and inspect the red color lightness distribution of this area. One can have the red color lightness distribution figure as Figure 2.

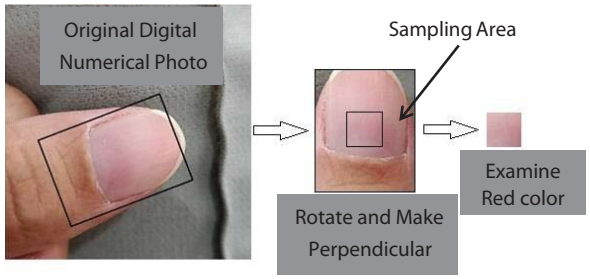

Figure 1: Original Digital Numerical Photo and Sampling Process.

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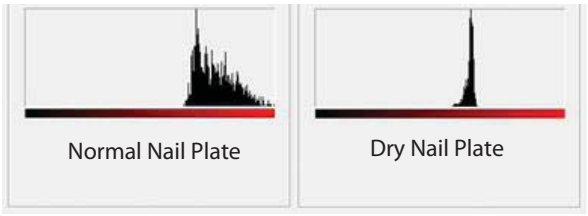

Figure 2: Red Color Distribution of the Nail Plate.

Conclusion

From Figure 2, it is clear that the lightness distribution of the red color for healthy people's nails is wider than the red color lightness distribution of the dry nail. The nail condition levels were inspected by a senior well-trained manicurist.

References

1. Suguna S,Hemanandhini K, Hemachitra HS. Detection of Nail Peculiarities Using Nail Image Processing Techniques. Science, Technology and Development. 2020; 9(11):174-188.

2. Wen-Li Ou. The Study of Red Color to Determine the Water in the Human Nails. Master Thesis, National Ilan University. 2021.

3. Gniadecka M, Faurskov Nielsen O, Christensen DH, Wulf HC. Structure of water, proteins, and lipids in intact human skin, hair, and nail. J Invest Dermatol. 1998 Apr;110(4):393-8. doi: 10.1046/j.1523-1747.1998.00146.x. PMID: 9540981.

4. Cashman MW, Sloan SB. Nutrition and nail disease. Clin Dermatol. 2010 Jul-Aug;28(4):420-5. doi: 10.1016/j.clindermatol.2010.03.037. PMID: 20620759.

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