

Disease Reflected with the Condition of Nails

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ABSTRACT: A nail is a structure which is not a bone made up of different composition than skin tissue like keratin which is also present in hair and this is also presented as an outer layer of skin for protection. Nail used to protect finger tips and adjacent tissues from injuries. The epithelial matrix cells attached to the nail bed give rise to the formation of nails. There is a difference between healthy and unhealthy nails which is distinguishable by their difference in color, healthy nails are pink in color and have a flexible smooth and shiny surface of nail. When it comes to growth the growth of nails is a sign of removing dead cells from the human body. The growth rate of nails are more in child's than young and old people. Human nails and problems associated with it such as size, color and shape of the nail will also indicate the type of disease and problems associated with the body. Human nails consist of many parts which have been discussed in this paper and also nails used to perform different tasks are also explained in this paper. Human nails can work as an indicator and it is a very helpful way for the treatment of many diseases. In this paper also discussed the purpose of the study which is to measure the ph level of the nail and maintain healthy nail, to maintain the healthy nail we have to measure the ph level of nail paint and other nail related chemicals so that it can give a healthy and shiny nail plates, in this paper on the basis of healthy ph value of nail plate people can control the flow of nail paint and nail paint remover on it. Also the scope of the invention and why taking care of nail and nail related remedies and problems has been discussed in this paper, how we can maintain or increase or decrease the ph level of nail has also been discussed in this paper.

KEYWORDS: Nail, Keratin, Hyponychium, Eponychium, Lunula, Ph Meter, Microcontroller, Acetone, Chemicals.

INTRODUCTION

The objective of the invention is to give an advanced nail shaper which can maintain the ph. level and protein level of nails.

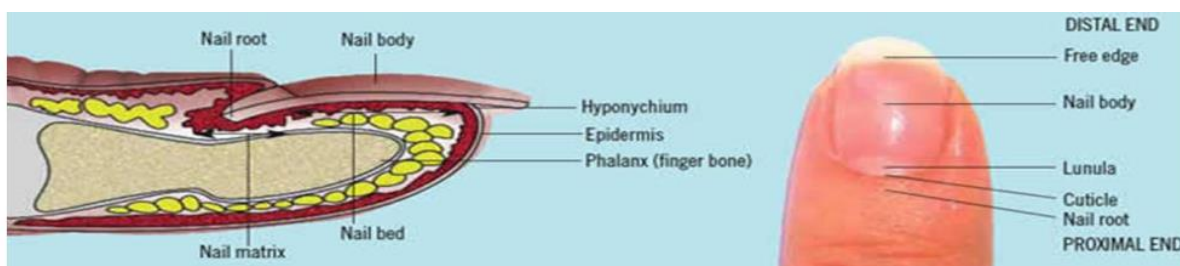


Fig 1: Nail Structure and Anatomy

A nail is a structure which is not a bone made up of different composition than skin tissue like keratin which is also present in hair and this is also presented as an outer layer of skin for protection. Nail used to protect finger tips and adjacent tissues from injuries. The epithelial matrix cells attached to the nail bed give rise to the formation of nails. There is a difference between healthy and unhealthy nails which is distinguishable by their difference in color, healthy nails are pink in color and have a flexible smooth and shiny surface of nail. When it comes to growth the growth of nails is a sign of removing dead cells from the human body. The growth rate of nails are more in child's than young and old people [1]. Human nails and problems associated with it such as size, color and shape of the nail will also indicate the type of disease and problems associated with the body [2].

Figure 1 shows the human nail anatomy in which the nail is located at the distal part of each digit, Nails (with hair sebaceous and sweat glands) are known to be appendages of the skin. Nails are the invagination of the outer layer of the skin, the Epidermis and composed of very small cells, called oncocytes, which are mainly made up of keratin, a fibrous protein. Human nail is composed of many parts like a nail plate, nail bed, matrix, nail cuticle, eponychium, hyponychium, specialized ligaments and nail folds. The nail plate is more porous than skin, hence water can pass through it more easily than through the skin. In this paper discussed about the nail bed, the nail bed is the living skin which is present inside the nail plate or nail bed is the area on which the nail rests. Nail structure and anomaly has been discussed in this paper, nail matrix has also been discussed in this paper nail matrix is a specialized epithelial structure which is presented below the proximal nail fold. In this paper I discussed lunula, which is a whit color clearly visible semicircle shape (half-moon) mark at the base of the nail plate. Discussed what is cuticle and eponychium Generally, Cuticle and Eponychium create confusion with each other [3].

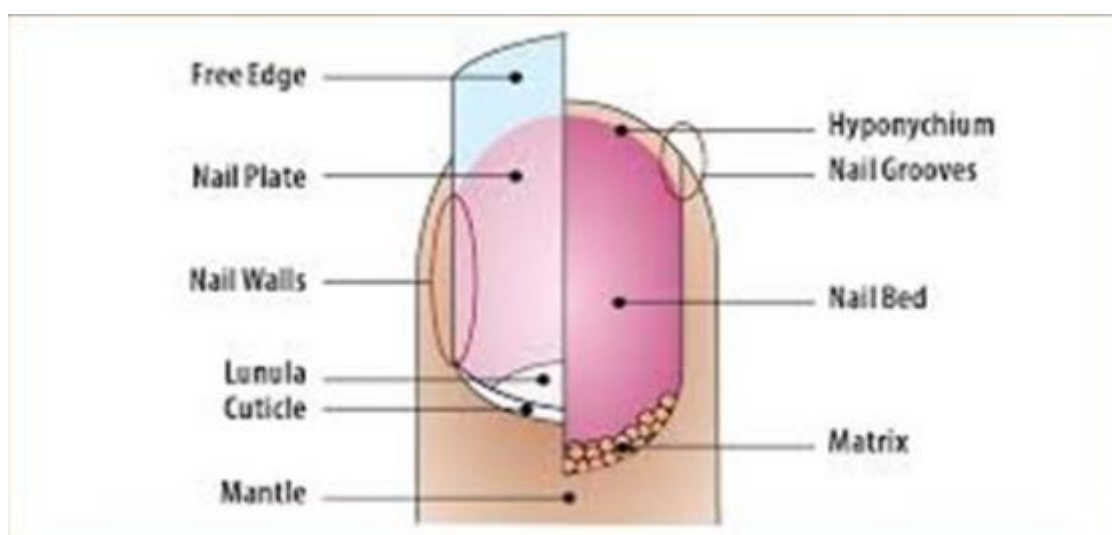


Fig 2: Human Nail Anatomy

Figure 2 shows the nails parts, also pH range of nail has been shown which varies according to the gender of people, pH value of nail also varies according to the type of work they do. Gender influenced the pH of unwashed nails - with women having lower pH compared to men - but had no influence on the pH of washed ones, suggesting the influence of an exogenous factor [4]. To maintain the pH level of nail, users can wash the nail and sometimes dip their nails on acidic or base gel according to the need of the nail. To maintain the pH value of nail first wash the nail with any liquid cleanser also nail can be washed by tap water, doing this can maintain the pH value of nail, this process can change the pH value of nail only for sometimes (20 minutes). Tape stripping the nail plates in order to measure the pH of the nail plate interior revealed a lower pH inside the nail plate compared to its surface. In this study of nails it is shown that the pH value of a nail plate can be determined and to know the pH value of nail is necessary for health. The pH value of a nail can be determined by using the Courage & Khazaka skin pH meter, to perform this process a long and stabilization process is necessary [5].

LITERATURE REVIEW

There has been many paper published in the field of nail shaper, nail design and nail chemical, also different paper has been published in the field of nails study, among all the research paper a research paper titled A comprehensive review on human nail by Vivek Kumar, Sangeet Sharma, Naveen, Pawan Jalwal discussed about the Structure and Anatomy of Human nail, nail composition, chemical presents in nails and condition of nails can also be able to find out the disease associated with body, nail act as an indicator of body. In this paper it is discussed the nail plate and gave the conclusion that the nail plate is the hard translucent, visible component of the nail is known as nail bed and that bed is of keratin. Proximally and laterally the nail plate is surrounded by the nail folds, which covers its proximal and lateral margins. The nail plate is more porous than skin, hence water can pass through it more easily than through the skin. In this paper discussed about the nail bed, the nail bed is the living skin which is present inside the nail plate or nail bed is the area on which the nail rests.

Nail structure and anomaly has been discussed in this paper, nail matrix has also been discussed in this paper nail matrix is a specialized epithelial structure which is presented below the proximal nail fold. In this paper I discussed lunula, which is a whit color clearly visible semicircle shape (half-moon) mark at the base of the nail plate. Discussed what is cuticle and eponychium Generally, Cuticle and Eponychium create confusion with each other. They are not the same. There are some specialized ligaments present in the nail and discussed the specialized ligaments is a tough band of fibrous tissue that attaches the nail bed and matrix bed to the underlying bone. In this paper discuss the function of nail, such as where nail used and what is the function of nail, what is Hyponychium and what cause damage of the cells and tissues, hyponychium is the most remote, soft, slightly thickened layer of skin that is located between the fingertip and the free edge of nail plate and forms a waterproof protective barrier that prevents microorganisms from overrun and infecting nail bed. Discussed what is nail fold,

nail fold is a fold of normal skin which covers the nail plate and forms the nail slot which runs on the side wall of nail plate. Also explains the importance of nails in treatment of different kinds of diseases, shape, color and nature of the nails also tell about the health and hygiene of a person. Nails are examined routinely by the doctors to get some information about disease. Nails sometimes consist of germs and bad chemicals into the nail that make nails unhygienic and that happens mainly in case of children because children can touch bad and dirty things. Color of the nail decides the condition of health and this also has been discussed in this paper [6].

A research paper titled An assessment of the human nail plate pH by S Murdan*G Milkovich and G S Goriparthi discussed Purpose of study: To measure the pH of the surface of healthy nail plates, also discussed about the procedure of finding the pH of human fingernails and big toenails, and pH measurement of the skin is by using pH meter, In this paper I discussed the nail plate and gave the conclusion that the nail plate is the hard translucent, visible component of the nail is known as nail bed and that bed is of keratin. Proximally and laterally the nail plate is surrounded by the nail folds, which covers its proximal and lateral margins. The nail plate is more porous than skin, hence water can pass through it more easily than through the skin. In this paper discussed about the nail bed, the nail bed is the living skin which is present inside the nail plate or nail bed is the area on which the nail rests. Nail structure and anomaly has been discussed in this paper, nail matrix has also been discussed in this paper nail matrix is a specialized epithelial structure which is presented below the proximal nail fold. In this paper I discussed lunula, which is a white color clearly visible semicircle shape (half-moon) mark at the base of the nail plate. Discussed what is cuticle and eponychium Generally, Cuticle and Eponychium create confusion with each other. They are not the same. There are some specialized ligaments present in the nail and discussed the specialized ligaments is a tough band of fibrous tissue that attaches the nail bed and matrix bed to the underlying bone. Also on the basis of nails color, texture and shape it also identifies the type of problem associated with the body, and the result of the experiment also has been shown in this paper [7].

CONCLUSION

The pH of the healthy nail plate surface was measured to be around 5 or 0.5 more or less than this value is suitable. Some nails with higher pH of nail is also harmful, for a healthy nail pH of nail should be 5 to 5.5 on that pH nail is suitable for applying nail paint and nail paint remover on it with toenails having significantly higher pH than fingernails. When it comes to the pH value of a nail then it has been seen that the pH value of ten finger nail is almost similar to the pH value of toenails. Also pH range of nail has been shown which varies according to the gender of people, pH value of nail also varies according to the type of work they do. Gender influenced the pH of unwashed nails - with women having lower pH compared to men - but had no influence on the pH of washed ones, suggesting the influence of an exogenous factor. To maintain the pH level of nail, users can wash the nail and sometimes dip their nails on acidic

or base gel according to the need of the nail. To maintain the pH value of nail first wash the nail with any liquid cleanser also nail can be washed by tap water, doing this can maintain the pH value of nail, this process can change the pH value of nail only for sometimes (20 minutes). Tape stripping the nail plates in order to measure the pH of the nail plate interior revealed a lower pH inside the nail plate compared to its surface.

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