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Significance of Indicators of Dermatoglyphics of Fingers and Palm

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Abstract
In this article, the understanding of what dermatoglyphics studies, what are its sections, what can be studied in these sections, and the importance of finger and palm dermatoglyphics indicators is fully explained.

Keywords: Dermatoglyphics, palmoscopy, dactyloscopy, distal, proximal, tenor, hypotenor, ulnar, arcuate, loop, circular.

Introduction

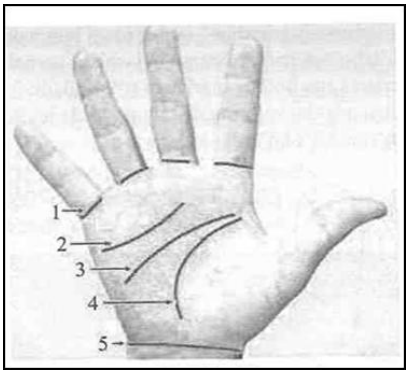
Dermatoglyphics is a special science that studies patterns on the skin of people's fingers, palms, and heels. Dermatoglyphics is derived from two Greek words, derma - skin and glyphica - to draw. The concept of dermatoglyphics was introduced to science by Cummins and Midla.

Complex images on the skin appear at the expense of bumps formed from the dermis layer of the epidermis. The patterns formed on the tips of the fingers are unique for people of each race. But these patterns on the fingers have a unique appearance in each person, and one person's is not the same as the other. Dermatoglyphics consists of 3 sections.

Palmoscopy - studies the image of patterns on the skin of the palm. The outer structure of the palm and the patterns on the skin of the palm are more complex. There are many pads, folds and areas in the palm. There are usually 11 pads in the palm, which consist of 5 pads on the tips of the fingers, 4 pads between the fingers, and two large tenor and hypotenor pads.

5 folds in the palm:

- 1. Palm-finger
- 2. Distal
- 3. Proximal
- 4. The fold of the thumb
- 5. Wrist fold



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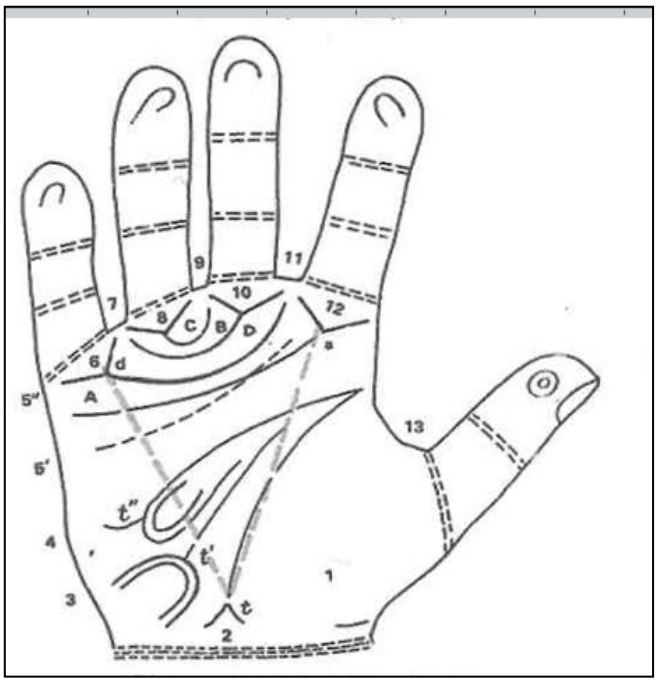
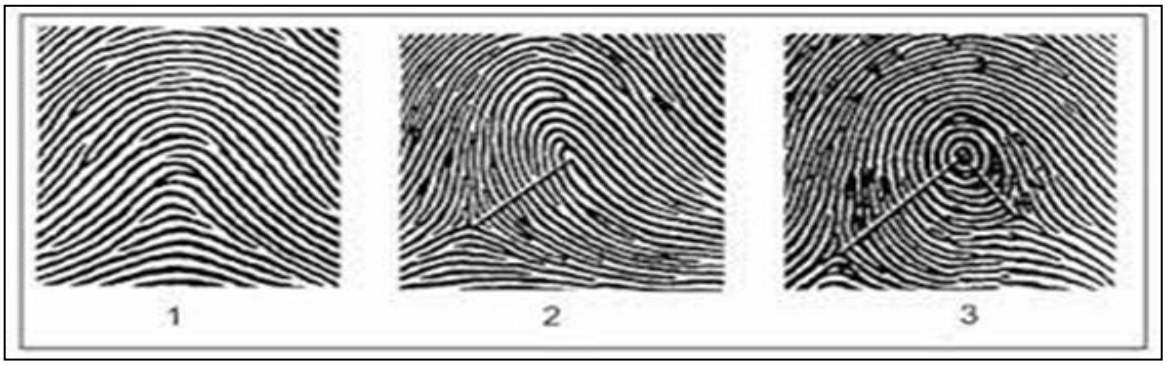
The folds in the palm are palmar fold, carpal fold, distal fold and proximal fold, and finally the thumb fold.

These are the areas on the palm - on the surface of the 4 fingers, between the 4 fingers, on the ulnar side of the palm, there are 3, 4, 5, 5 line areas.



Dactyloscopy - studies the patterns on the fingertips. Fingertip lines can be divided into 3 types:

- 1. Arc (A) – 6% – E (17-18) group
- 2. Loop (L) – 60% – G (21) group
- 3. Circular (W) – 34% – D (13-15) group



Dactyloscopy:

- Patterns on the skin appear in 10-19 weeks of embryonic development
- All lines have appeared in the 20-week embryo
- It is completely formed at the age of 6 months and remains until the end of life

In addition, there are two triradius in the circular pattern and one triradius in the loop. Palm patterns also have a triradius. In a healthy person, the triradius of the palm should not exceed 57.

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The main dermatoglyphic signs in people with a change in the number of chromosomes::

Chromosomal disease	Dermatoglyphic signs
Trisomy 13 (Patau syndrome)	The main triradius is pushed to the distal side of the palm (Z atd = 108°). It has four transverse flexural folds. There are more arcuate lines on the fingertips
Trisomy 18 (Edwards syndrome)	There are arcuate lines on the tips of the fingers, and there is a four-finger transverse flexor fold. The main triradius is on the distal side of the palm.
Trisomy 21 (Down's syndrome)	The lines on the fingertips are loop-shaped and open to the ulnar side. There is a four-finger cross-flexible hook. The main triradius is located on the distal side of the palm, and Z a td =81° normally should not exceed Z atd = 57°.
Cat's scream syndrome	Circular and arcuate lines are more common on the fingertips. The main triradius is on the distal side of the palm. There is no c- triradius at the base of the finger. The total number of lines on the fingers is reduced.
Klinefelter's syndrome (XXY)	Arched lines are more common on the fingertips. The number of raised skin lines on all fingers has decreased. The main triradius is on the proximal side of the palm.
Shereshevsky-Turner syndrome (X0)	There are many loop-shaped and circular lines on the fingertips. The main triradius is located on the ulnar side of the distal part of the palm. The number of bulging lines on the fingers has increased. There will be no c-triradius at the base of the finger.

Dermatoglyphic analysis is a traditional method of anthropology and genetics, studying each pattern of human fingers and palms. In dermatoglyphics, qualitative invariance throughout life, high heritability, and division of dermatoglyphic signs into individual groups are of great value in medical biological investigations. At the same time, the fact that dermatoglyphic signs are individual and in different groups makes it difficult to diagnose pathological markers in human physiology.

Dermatoglyphics studies the lines and folds of the skin all over a person's body. However, most often the paw and rarely the heel are examined. By carefully examining the patterns on the patient's palm and fingers, the doctor can determine the weak area in the patient's body (N.D. Sharipova, 2006; A.M. Mannonov, 2010).

Recently, great importance has been attached to the study of dermatoglyphics in chromosomal, congenital, multifactorial diseases (S.A. Hasanov, 2006; A.M. Mannonov, 2010). reflects the distribution of its location in epidermodermal areas.

It is known that the patterns on the hands appear simultaneously with the formation of the nervous system before the birth of a person, and the formation of skin lines in the human dermatostatus starts from the 10-19 weeks of embryogenesis and lasts until the 20th week. The formation of papillary relief depends on the branching of nerve fibers, after 6 months the papillary relief is completely formed, and then its structure remains unchanged in the individual's phenotype for a lifetime. In addition to genes, the child also receives hand and other patterns from the father. Therefore, the dermatoglyphics method is considered an informative morphological-genetic sign in the study of skin relief

Among peoples of different nationalities, it is observed that dermatoglyphic indicators are distributed in different forms. For example, Europeans have a large number of fringed patterns, and Mongolian peoples have a high number of scroll patterns.

It is emphasized that through this method it is possible to determine the characteristics of peoples of different nationalities and ethnic groups.

Currently, the dermatoglyphics method is studied in hereditary, alcoholism, rheumatoid arthritis and other diseases.

It is very difficult to find 3 identical arch marks on the fingers of a person. These patterns are rare. Thus, despite the fact that the lines and folds on the skin of the human body in various diseases were studied in the analysis of the indicators of the dermatoglyphics of the fingers and palms in the scientific works of this direction, the information about the scientific works related to the changes observed in the dermatoglyphics in the ST was not confirmed in the literature that we observed, that is, it was not found.

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