

# Contents

<b>1</b>	<b>Embryogenesis and Genetics of Epidermal Ridges</b>	<b>1</b>
<b>2</b>	<b>Methods of Recording Dermatoglyphics</b>	<b>13</b>
	<b>STANDARD METHODS 15</b>	
	Ink Methods ○ Inkless Methods ○ Transparent Adhesive Tape Method ○ Photographic Method	
	<b>SPECIAL METHODS 20</b>	
	Hygrophotography ○ Radiodermatography ○ Plastic Mold ○ Automatic Pattern Recognition	
<b>3</b>	<b>Dermatoglyphic Pattern Configurations</b>	<b>27</b>
	<b>RIDGE DETAIL (MINUTIAE) 28</b>	
	<b>PATTERN CONFIGURATIONS 29</b>	
	Fingers ( <i>Fingertip pattern configurations, Dermatoglyphic landmarks, Patterns of middle and proximal phalanges</i> ) ○ Palms ( <i>Palmar pattern configurations, Palmar landmarks</i> ) ○ Toes ○ Soles ( <i>Plantar pattern configurations, Plantar landmarks</i> )	
	<b>QUANTITATIVE ANALYSIS 59</b>	
	Pattern Intensity ○ Ridge Counting ( <i>Finger and toe ridge counts, Ridge counts of digital areas, Ridge counting in patterns lacking</i> )	

*triradii, Estimation of the ridge count on missing or mutilated fingertips*) ○ Position of Axial Triradius (*atd angle, Measurement of distal deviation, Ridge counting, Breadth ratio*) ○ Main-line Index

DERMATOGLYPHIC TOPOLOGY 70

Topological Classification of Palmar Dermatoglyphics ○ Topological Classification of Plantar Dermatoglyphics

FREQUENCY OF DERMATOGLYPHIC TRAITS IN  
NORMAL POPULATIONS 77

Bilateral Symmetry ○ Sex Differences in Dermatoglyphics ○ Racial Differences in Dermatoglyphics

**4** Congenital Malformations of Dermatoglyphics 89

RIDGE APLASIA 90

RIDGE HYPOPLASIA 93

RIDGE DISSOCIATION 94

“RIDGES-OFF-THE-END” 99

**5** Flexion Creases 103

EMBRYOLOGY OF FLEXION CREASES 103

CLASSIFICATION OF PALMAR FLEXION CREASES 105

Major Creases ○ Minor Creases ○ Secondary Creases ○ Other Hand Creases (*Phalangeal creases, Metacarpophalangeal creases, Wrist creases*)

PLANTAR FLEXION CREASES 118

WHITE LINES 122

**6** Medical Disorders with Associated Dermatoglyphic Abnormalities 131

CONGENITAL MALFORMATIONS OF HANDS AND FEET 131

Thalidomide Embryopathy ○ Absence or Hypoplasia of the Thumbs  
○ Triphalangy of the Thumbs ○ Holt–Oram Syndrome ○ Anonychia

- Distal Phalangeal Hypoplasia ○ Brachydactyly ○ Camptodactyly
- Syndactyly ○ Polydactyly ○ Other Gross Hand and Foot Malformations

**AUTOSOMAL TRISOMIES 146**

- Trisomy 21 (Down Syndrome) ○ Trisomy 18 ○ Trisomy 13
- Trisomy 8 Mosaicism

**ABERRATIONS OF SEX CHROMOSOMES 173**

- Monosomy of the X Chromosome (Turner Syndrome) ○ Polysomies of the X and Y Chromosomes (Klinefelter Phenotype) ○ Polysomies of the Y Chromosome ○ Polysomies of the X Chromosome

**TRIPLOIDY 183**

**STRUCTURAL CHROMOSOMAL ABERRATIONS 184**

- Deletion of the Short Arm of Chromosome 5 (Cri-du-chat Syndrome)
- Deletion of the Short Arm of Chromosome 4 (Wolf-Hirschhorn Syndrome) ○ Deletions of Chromosome 18

**SINGLE-GENE DISORDERS AND DISORDERS WITH UNCERTAIN GENETIC TRANSMISSION 196**

- de Lange Syndrome ○ Rubinstein-Taybi Syndrome ○ Smith-Lemli-Opitz Syndrome ○ Cleft Lip and Palate ○ Cerebral Gigantism

**NONGENETIC AND EXOGENOUS FACTORS 209**

- Rubella Embryopathy ○ Leukemia ○ Cytomegalic Inclusion Disease
- Celiac Disease

**Index**