Note: Page numbers set **bold** or *italic* indicate headings or figures, respectively.

A

- ABDQ, see Abductor digiti quinti (ABDQ) AbDQM, see Abductor digiti quinti
- minimi (AbDQM) Abductor digiti quinti minimi
- (AbDQM) 15
- Abductor pollicis brevis, (AbPB)129Abductor pollicis brfevis (AbPB)14
- Abductor pollicis longus (AbPL) 10, 232, 276
- Above-knee (AK) amputations 593 AbPB, *see* Abductor pollicis brevis, (AbPB)
- AbPL, see Abductor pollicis longus (AbPL)
- ADD diagnosis, *see* Attention deficit disorder (ADD) diagnosis
- AddP, see Adductor pollicis (AddP) Adductor pollicis (AddP) 14, 128–129, 138, 192, 205, 236, 241, 433, 473, 487
- 487 Adipofascial flap plus skin graft
- analysis of the deficit 586
- formulation of a treatment plan 586
- history and examination **586**
- outcome 586
- preferred option 586
- Adipofascial flap plus skin graft 586, 587
- See also Fingertip injuries, skin grafts for; Full-thickness hypothenar skin graft; Full-thickness skin graft (FTSG)
- ADQM muscle transfer as a
- myocutaneous flap 280
- Aeromonas hydrophila 80 Aesthetic units 38
- AK amputations, see Above-knee (AK) amputations
- ALT flap, see Anterolateral thigh (ALT) flap
- American civil war and era of
- microsurgery, legacies of 593, 594 Amputated digits, immediate
- reattachment of - analysis of the deficit **363**
- formulation of a treatment plan 363
- history and examination 363
- outcome 364
- preferred option 363
- Amputated digits, immediate
- reattachment of **363** Amputated hand reattachment at wrist level
- analysis of the deficit 286
- formulation of a treatment plan 286
- history and examination 286
- outcome 287
- preferred option 286
- Amputated hand reattachment at wrist level 286, 287
- Amputated hand, cosmetic hand prosthesis for
- analysis of deficit 298
- formulation of treatment plan 298history and examination 298
- outcome 298

- preferred option 298
- Amputated hand, cosmetic hand prosthesis for 298
- Amputated part, reattachment and revascularizaton of
- analysis of the deficit 337
- history and examination 337
- outcome 337
- preferred option 337
- treatment plan, formulation of 337 Amputated part, reattachment and
- revascularizaton of **337** Amputated parts, primary
- reattachment of - analysis of the deficit **340**
- history and examination 340
- outcome 342
- preferred option 342
- treatment plan, formulation of 342
- Amputated parts, primary reattachment of **340**, 341
- Amputation 458
- Anatomical planes
- of transition of finger 32 of transition of thumb 32
- Anatomy
- degloving and avulsion injuries of
- fingers and thumb 632 - degloving and mutilation injuries of
- hand and wrist **657** - elective incisions for finger, hand,
- wrist, and forearm **597** - longitudinal and oblique loss of the
- fingers and thumb **570** - longitudinal palmar defects
- involving the fingers and thumb
- transverse zone III of finger **334**
- transverse zone III of thumb 66
- transverse zone IV of finger 362
- transverse zone IV of thumb 99
- transverse zone IX of thumb 249
- transverse zone V of finger 389
- transverse zone VI defect of thumb 151
- transverse zone VI of finger 427, 457
- transverse zone VII of thumb 191
- transverse zone VIII of thumb 216
 transverse zone X of thumb (wrist
- level) 284
- transverse zones I and II of finger
 300
- transverse zones I and II of thumb 43
- zone V defect of thumb 128
 Antegrade homodigital island
- advancement flap
- analysis of the deficit 317
- history and examination 317outcome 317
- preferred option 317
- prefered option 317
 treatment plan, formulation of 317
 Antegrade homodigital island
- advancement flap **317**, 318 Anterolateral thigh (ALT) flap 207,
- 458, 583
- Antibiotics 89

Arteriovenous fistula (AVF) anomalies 492 Aspirin 89 Attention deficit disorder (ADD) diagnosis 593 Autogenous cortical grafts 306 Autogenous vein grafts 633 AVF anomalies, see Arteriovenous fistula (AVF) anomalies AVM, see Arterial malformations (AVM) Avulsion amputation of the thumb - class IVd -- analysis of the deficit 650 -- formulation of a treatment plan 650 -- history and examination 650 -- outcome 651

- preferred option 663

flan 661

amputation

- outcome 661

- outcome 482

483

Bilateral crush/avulsion treated with

Bilateral degloving, multiple digit

analysis of the deficit 658

- history and examination 658

Bilateral degloving, multiple digit

preferred option 658

amputation 658

Bilateral forefoot to hand

- analysis of the deficit 479

- history and examination 479

- reconstructive options 479

Bilateral metacarpal hands 448

digital losses 662

- outcome 169

toe transfer

- outcome 117

- outcomes 113

114.116

flap 84

Botox injection 122

Boutonniere 21

- outcome 325

following

445, 446

443, 444

- preferred option 117

Bilateral second toe transfer

- analysis of the deficit 169

- preferred option 169

- history and examination 167

Bilateral mutilation with multiple

Bilateral forefoot to hand 479, 480,

Bilateral hallux valgus deformities 113

- formulation of a treatment plan 169

Bilateral second toe transfer 167, 168

transfer; Failing toe transfer; Great

transfers; Microvascular toe transfer;

Second toe transfer; Toe transfer;

Trimmed great toe transfer; Triple

- formulation of treatment plan 113

- history and examination 113, 116

Bilateral thumb reconstruction 113,

Bipedicle palmar island advancement

Broad thenar flap to index finger

- history and examination 325

Burn injuries, metacarpal hands

double second-third toe transfer

- simultaneous unilateral double toe

713

- treatment plan, formulation of 325

Broad thenar flap to index finger 326

Bulky palmar flap, to index finger 325

- analysis of the deficit 325

- preferred option 325

Bulky palmar flap 674

Bilateral thumb reconstruction

analysis of deficit 113, 117

- See also Custom partial great toe

toe transfer; Isolated distal toe

transfer; Elective second toe

bone graft and free dorsalis pedis

- formulation of a treatment plan 661

- formulation of a treatment plan 479

-- preferred option 650

Anticoagulants 226

fingertip 343

Arterial system 25

of 37

Arterial anatomy 44, 45

Arterial anatomy of thumb and

Arterial architecture, simple schematic

Arterial malformations (AVM) 492

Arterialized venous flaps 544

- class IVd 650
- groin flap
- -- analysis of the deficit 652

652

339

В

- -- formulation of a treatment plan 652
- -- history and examination 652

Avulsion amputation of the thumb

- analysis of the deficit 339

- history and examination 339

Avulsion amputation, reattachment of

- treatment plan, formulation of 340

Avulsion amputation, reattachment of

- formulation of a treatment plan 672

- -- outcome 652
- preferred option 652
 groin flap 652, 653

outcome 340

- outcome 672

prosthesis

671

flap

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- outcome 664

- preferred option 340

Avulsion of all palmar skin

- analysis of the deficit 672

- history and examination 672

- reconstructive options 672

Avulsion of all palmar skin 672

BE prosthesis, see Below-elbow (BE)

Below-elbow (BE) prosthesis 250

Best flap for dorsal hand resurfacing?

Bilateral crush/avulsion treated with

- analysis of the deficit 661

- history and examination 661

bone graft and free dorsalis pedis

formulation of a treatment plan 663

- unilateral metacarpal hand 442 Burn injuries, metacarpal hands following 441
- Burned hands, bilateral type IIB metacarpal hands
- analysis of the deficit 437
- formulation of a treatment plan 440
- goals of anticipated hand reconstruction 437
- history and examination 437 - initial treatment and options for
- reconstruction 440
- outcome 440
- Burned hands, bilateral type IIB metacarpal hands 437, 438

С

C-wires 310, 515 Calcium channel blockers 226 Callostasis 185, 430 Callotasis 385 CAM effect 8 Carpometacarpal (CMC) joint 5, 6, 10-12, 63, 99, 129, 148, 151-152, 163, 170, 177, 189, 192, 207, 217, 241, 267, 292, 430-431, 433, 436, 459, 473, 483, 492, 503, 645, 661, 691 - See also Distal interphalangeal (DIP) joint; Interphalangeal (IP) joint; Metacarpophalangeal (MP) joint;

Proximal interphalangeal (PIP) joint CDA, see Common digital artery (CDA)

Central amputations with or without transposition 648

Cerebral cortical representation 44 Chest flap + bone graft

- analysis of the deficit 60
- formulation of a treatment plan 60
- history and examination 60
- outcome 60
- preferred option 60
- Chest flap + bone graft 60 Chest pedicle flap to lateral thumb surface
- analysis of deficit 591
- formulation of treatment plan 591 - history and examination 591
- outcome 591

- preferred option 591 Chest pedicle flap to lateral thumb surface 591

- Chinese sign 103, 103, 153
- Chorionic villus sampling (CVS) 167 Chuck pinch 427

CI, see Cold intolerance (CI)

Civil war, legacies of 595

Class IV ring avulsion injuries

- ring avulsion in older patient
- -- analysis of the deficit 647
- -- formulation of a treatment plan 648
- -- history and examination 647 -- outcome 648
- -- preferred option 648
- ring avulsion in older patient 647
- skin envelope reattachment as a
- composite graft -- analysis of the deficit 645
- -- formulation of a treatment plan
- 645 -- history and examination 645
- -- outcome 645

714

- -- preferred option 645
- skin envelope reattachment as a composite graft 645
- Class IV ring avulsion injuries 644 Classic osteoplastic reconstruction 171 Classification of thumb and digital
- losses 27 Clavicular flap with vascularized bone
- graft 174 Claw nail deformity 44, 45
- Cleft hand reconstruction with index transposition, bilateral
- analysis of the deficit 455
- formulation of a treatment plan 455
- history and examination 452
- outcome 455
- preferred option 455 Cleft hand reconstruction with index
- transposition, bilateral 452 Cleland ligament 27
- Cleland ligament (septum) 597, 599 Cleland septa 133, 570 "Cliff notes" approach 59 CLOVES syndrome 245, 246
- CMC joint, see Carpometacarpal (CMC) joint
- "Cocked hat" procedure 689
- Cold and warm ischemia time damaged ring finger to thumb
- transposition 138
- painful, parasitic thumb following replantation 135
- thumb salvage failures 137 - thumb-index web space release
- following trauma 137 Cold and warm ischemia time 135
- Cold intolerance (CI) 122, 201 Common digital artery (CDA) 27
- Complete severance/injury to hyponychium of thumb 42
- Complete syndactyly, incisions for 629 Completely amputated fingertip.
- revascularization of - analysis of the deficit 313
- history and examination 313
- outcome 314
- preferred option 313
- treatment plan, formulation of 313 Completely amputated fingertip, revascularization of 313, 314
- Complex and complicated polysyndactyly 629 Complex, compound dorsal digital
- injury following failed groin flap - analysis of deficit 557
- formulation of a treatment plan 557
- history and examination 557
- outcome 559
- preferred option 557
- reconstructive options 557
- Complex, compound dorsal digital injury following failed groin flap 557
- Compliance 387
- Composite graft
- in a neonate, tidy case
- -- analysis of the deficit 307
- -- history and examination 306
- -- outcome 307
- -- preferred option 307
- -- treatment plan, formulation of 307
- in a neonate, tidy case 306, 307
- reattachment as

- -- analysis of the deficit 47
- -- history and examination 46
- -- outcome 48
- -- preferred option 48
- -- treatment plan, formulation of 48 - reattachment as 46

CRS, see Constriction ring syndrome

Crush injury isolated to index finger

CT scans, see Computed tomography

CTA, see Composite tissue allograft

Custom hybrid second toe + lateral

- analysis of deficit 144

- outcome 144

- to index finger 349

to left long finger

-- outcome 352

great toe flap transfer to thumb

- formulation of treatment plan 144

- history and examination 144

Custom hybrid second toe + lateral

Custom partial great toe transfer

-- analysis of the deficit 351

-- preferred option 351

- to left long finger 351

Triple toe transfer

index finger

- outcome 349

- outcome 203

-- history and examination 351

-- treatment plan, formulation of 352

Bilateral second toe transfer; Elective

transfer: Great toe transfer: Isolated

toe transfer; Second toe transfer; Toe

transfer; Trimmed great toe transfer;

distal toe transfers; Microvascular

Custom partial great toe transfer, see

second toe transfer; Failing toe

Custom partial great toe transfer to

- analysis of the deficit 349

- preferred option 349

index finger 351

toe transfer to thumb

analysis of deficit 201

preferred option 201

Custom-made fabrication

flaps 354.355

transposition

- outcome 140

(DAP) flaps

- preferred option 140

transposition 138

(CVS)

D

aged) person 355, 356

Custom-made fabrication 353

Damaged ring finger to thumb

analysis of the deficit 140

- history and examination 138

Damaged ring finger to thumb

- formulation of a treatment plan 140

DAP flaps, see Dorsal artery perforator

CVS, see Chorionic villus sampling

- history and examination 349

- treatment plan, formulation of 349

Custom-made distal great toe + second

- formulation of treatment plan 201

Custom-made distal great toe + second

cross-finger flap in an older (middle-

primary closure with lateral V-to-Y

toe transfer to thumb 201, 202

- history and examination 201

Custom partial great toe transfer to

great toe flap transfer to thumb 144

(CRS)

484

(CTA)

(CT) scans

- untidy case
- -- analysis of the deficit 308
- -- history and examination 307
 - -- outcome 308
- -- preferred option 308

Composite tissue deficit 44

-- treatment plan, formulation of 308

Composite tissue allograft (CTA) 297,

Computed tomography (CT) scans 29

Congenital differences and thumb loss

critical thumb zone VI 189

Constriction ring syndrome (CRS)

166, 183, 189, 216, 386, 389

Continuous passive motion (CPM)

Cosmetic hand prosthesis for

- multiple toe transfers transfers for

Constriction ring syndrome (CRS) 126,

Corticocancellous bone grafts 451, 689

- formulation of treatment plan 298

CPM machine, see Continuous passive

Critical levels IV and V, thumb length

- history and examination 298

- untidy case 307 Composite graft 310

424

- foot in 417

child with 405

machine 288

amputated hand

- outcome 298

- analysis of deficit 298

- preferred option 298

Cosmetic hand prosthesis for

amputated hand 298

motion (CPM) machine

and options at 148, 149

Critical thumb zone I 42, 43

Critical thumb zone II 43, 43

Critical zones

- of finger 33

- of thumb 32

Cross-finger flap

325.326

322

- analysis of the deficit 51

Critical zone I injury of finger 300

Critical zone II of finger 300, 301

Critical zone II injuries of finger 311

Cross-finger fasciocutaneous flaps 306

- broad thenar flap to index finger

- elective thenar flap to ring finger

- in an older (middle-aged) person

-- history and examination 355

-- treatment plan, formulation of 356

- thenar flap for palmar oblique loss of

Cross-finger flap 51, 52, 321, 321, 362

- in an older (middle-aged) person

- history and examination 51

-- analysis of deficit 356

-- preferred option 356

preferred option 53

- reconstructive options 51

the ring finger 324, 324

-- outcome 357

355, 356

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- outcome 53

COVID epidemic 482

- See also Carpometacarpal (CMC)

Distal phalanx (DP), Intraosseous

Distal phalanx of thumb 68, 70

- distant and regional flaps for

-- analysis of the deficit 75

-- history and examination 75

secondary reconstruction of 63

- microvascular reattachment in 64

-- formulation of a treatment plan 75

Distal revascularization 77

ligaments of 44

Distal thumb

- deformities 44

revascularization

-- outcome 75

-- preferred option 75

- revascularization 75, 76

Distant pedicle transfer 544

Distraction + index transposition,

- congenital differences and thumb

loss critical thumb zone VI 189

- second toe transfer, distraction of

symbrachydactyly treated with

customized double second toe

Distraction metacarpal lengthening

- analysis of the deficit 181

- preferred option 182

- history and examination 181

Distraction metacarpal lengthening

DJD, see Degenerative joint disease

Dorsal and palmar degloving with

- formulation of a treatment plan

- history and examination 677

Dorsal and palmar degloving with

Dorsal cutaneous units of hand 609

Dorsal digital nerves (DDNs) 34-35

Dorsal interosseous (DI) muscles 17,

Dorsal metacarpal artery and palmar-

to-dorsal communicating arteries

715

Dorsal forearm and wrist loss 656

Dorsal digital arteries (DDAs) 35

Dorsal digital incisions 604

Dorsal hand incisions 607

Dorsal hand resurfacing 669

Dorsal intrinsic muscles 19

Dorsal longitudinal defects 34

- analysis of the deficit 677

Distraction lengthening 100, 185, 417

- formulation of a treatment plan 182

secondary groin flap 234

Distant pedicle flaps 635

Distraction lengthening

- at digital level IV 385

- of long finger 383

ulnar post 185

transfer 187

- outcome 182

181, 182

Donor toe 131

amputations

- outcome 677

- preferred option 677

amputations 677, 678 Dorsal artery perforator (DAP) flaps

(DID)

677

535

401

535

Distal phalanx (DP) 27

joint; Interphalangeal (IP) joint;

Metacarpophalangeal (MP) joint;

Proximal interphalangeal (PIP) joint

DDAs, see Dorsal digital arteries (DDAs) DDI, see Digital Damage Index (DDI);

Digital Defect Index (DDI) DDNs, *see* Dorsal digital nerves (DDNs) DEB testing, *see* Diethylbutane (DEB)

- testing Debridement 31
- Debridement and local flap revision
- analysis of deficit 54
- formulation of treatment plan 55
- history and physical examination
 54
- outcome 55
- reconstructive options 54
- Debridement and local flap revision 54
- Deep circumflex iliac artery (DCIA) system 465
- Deep palmar arch 25
- Defects of thumb and finger, classification of
- digital defect index (DDI) 34
- oblique longitudinal defects
- -- dorsal longitudinal defects 34
- -- lateral longitudinal defects 34
- -- palmar longitudinal defects 34
- oblique longitudinal defects 34
- transverse defectsfinger: anatomical planes of
- transition 32
- finger: critical zones 33
 thumb: anatomical planes of transition 32
- -- thumb: critical zones 32
- transverse defects 32
- Defects of thumb and finger, classification of **32**

Definitive coverage 671

Deformity

- degloving and avulsion injuries of fingers and thumb 633
- degloving and mutilation injuries of hand and wrist 657
- longitudinal and oblique loss of the fingers and thumb involving the lateral surface 571
- longitudinal palmar defects involving the fingers and thumb 494
- transverse zone IX of thumb 249
- transverse zone VI of finger 427
- transverse zone VIII of thumb 217
 Deformity/functional deficit
- thumb zone I 44
- thumb zone II 44
- transverse zone III of finger 335
- transverse zone III of thumb 68
- transverse zone IV of finger 362
- transverse zone IV of thumb 99
- transverse zone V of finger 389
 transverse zone VI defect of thumb 152
- transverse zone VI of finger 427, 458
- transverse zone VII of thumb 192
 transverse zone X of thumb (wrist level) 285
- transverse zones I and II of finger
 305
- transverse zones I and II of thumb 44
- zone V defect of thumb 129
- Degenerative joint disease (DJD) 491

Degloving and avulsion injuries of fingers and thumb

- anatomy 632
- avulsion amputation of the thumb
 652
- central amputations with or without transposition 648
- Class IV ring avulsion injuries 644
- classification 632, 633
- deformity 633
 functional deficit 634
- microsurgical salvage in an older patient 650
- reconstruction, options for **634**
- reconstruction, principles of 634
- reconstructive objectives 634
 ring avulsion Class IIa 635 636
- ring avulsion class IIa 635, 636
 ring avulsion injuries (Classes I and
- II) with intact skeleton **638** - ring avulsion Type Ilav **636**, 637
- ring finger and thumb avulsion
- injuries with degloving **654** Degloving and avulsion injuries of
- fingers and thumb **632** Degloving and mutilation injuries of
- hand and wrist
- anatomy 657
- avulsion of all palmar skin 672
 basic hand reconstruction.
- traditional procedures for 689
- bilateral crush/avulsion treated with bone graft and free dorsalis pedis flap 661
- bilateral degloving, multiple digit amputation 658
- deformity 657
- dorsal and palmar degloving with amputations 677, 678
- dorsal hand resurfacing 669, 669, 671
- functional deficit 657
- incompletely amputated parts and muscle loss 676
- metacarpal-like hand 690, 690mutilation and multiple digital
- losses **684** – reconstruction, principles of **658**
- reconstruction, principles of 036
 reconstructive objectives 657
- reconstructive objectives 6.
 reconstructive options 658
- secondary reconstruction following
- dorsal resurfacing 671
 spare parts salvage in circus arena
 679
- total loss of all dorsal structures of
- metacarpals and proximal phalanges **666**, 667
- total palmar and dorsal degloving plus amputations 664
- unique palmar surface 675
- water ski towrope avulsion, incomplete amputation of hand
- from **674** Degloving and mutilation injuries of
- hand and wrist **656** Degloving injuries 632
- Degloving, ring finger and thumb avulsion injuries with **654**
- Delayed replant and immediate osteoplastic reconstruction
- analysis of the deficit 133
- formulation of a treatment plan 133
- history and examination 133
- outcome 133

- preferred option 133
- Delayed replant and immediate osteoplastic reconstruction 133, 134

Delayed thumb reconstruction **93** Dextran 40 89

DI muscles, *see* Dorsal interosseous (DI) muscles

Diamond patterns 599, 603 Diethylbutane (DEB) testing 268, 273 Digital and palmar incisions 608 Digital artery perforator (DAP) flaps

520 Digital cascade and other factors

- extent of dissection 375

three digits = grip 375

378, 379

- smoking 375

timing 375

38, 48, 580

Digital extension

- digital flexion 23

- thumb flexion 24

Digital extension 19

- analysis of deficit 384

- preferred option 385

Digital level, distraction at

Digital ray resection 361

-- analysis of the deficit 408

-- formulation of a treatment plan

-- history and examination 408

- multiple toe transfers to both hands

Digital transposition 100, 126, 152,

DIP joint, see Distal interphalangeal

Distal interphalangeal (DIP) joint 15,

17, 21-23, 27, 34-35, 63, 113, 122,

153, 158, 194, 256, 288, 305, 315,

334, 344, 362, 366, 380, 389, 426,

492, 542, 553, 597, 599, 634

- preferred option 408

in CRS patient 408, 409

- analysis of the deficit 384

- history and examination 383

- history and examination 384

Digital flexion 23

- outcome 385

- treatment 385

wear 384.385

outcome 384

Digital transposition

in CRS patient

-- outcome 408

to thumb 200

458 470

(DIP) joint

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

408

at 423

wear

- extrinsic flexor muscles 22

- thumb and digital flexion 22

Digital lengthening prior to prosthetic

Digital lengthening prior to prosthetic

Digital level V, thinking out of the box

- formulation of a treatment plan 384

Digital level, distraction at 383, 383

- in zone VI in typical cleft hand 456

- multiple toe transfers to both hands

- failing toe transfer 375, 376

- long finger, cross-hand transfer of

- thumb + index = key pinch; ulnar

Digital cascade and other factors 374

Digital Defect Index (DDI) 1, 33, 34, 36,

Digital Damage Index (DDI) 34-35

- Dorsal nail reconstruction with toe transfers **550** Dorsal skin of thumb 39, 541
- Dorsalis pedis free fasciocutaneous flap 530, **530**
- Dorsalis pedis pedicle, great toe
- transfer with - analysis of the deficit **159**
- formulation of a treatment plan 159
- history and examination 159
- outcome 159
- preferred option 159
- Dorsalis pedis pedicle, great toe transfer with **159**
- Double second-third toe transfer in one hand, type IB metacarpal hand
- analysis of the deficit 445
- formulation of a treatment plan 447
- history and examination 445
- outcome 447
- preferred option 445
- Double second-third toe transfer in one hand, type IB metacarpal hand 445, 446
- Double toe transfer 467, 473, 476
- Down syndrome 286
- DP, *see* Distal phalanx (DP)
- Dynamic tenodeses and extensor system 16

Ε

- ECRB, *see* Extensor carpi radialis brevis (ECRB)
- ECRL, see Extensor carpi radialis longus (ECRL)
- Ectopic implantation 462
- Ectopic tissue banking and subsequent replantation
- severely crushed hands with no fingers or thumbs 467
- triple toe transfers in a type IID metacarpal hand 473
- type IIB metacarpal hand treated with digital transposition 470
- unilateral type IIB metacarpal hand following traumatic amputation at the mid-palmar level 465
- Ectopic tissue banking and subsequent replantation **464**
- ECU, see Extensor carpi ulnaris (ECU) EDC, see Extensor digitorum communis (EDC)
- EIP, *see* Extensor indicis proprius (EIP) Elective incisions for finger, hand,
- wrist, and forearm – anatomy **597**
- Cleland ligament (septum) 597, 599
- complete syndactyly, incisions for 629
- complex and complicated polysyndactyly 629
- dorsal digital incisions 604
- dorsal hand incisions 607
- first web space and incision options for reconstruction 608
- first web space release, options for
 610
- Grayson ligament (septum) 597
- interdigital web release, evolution of incision placement for 620
- interdigital web, geometry and relationships of 618

716

- mid-axial, mid-lateral, and oblique lines of finger and thumb 599
- oblique retinacular ligament (ORL) (septum) 599
- palmar digital incisions 602
- palmar hand incisions 604peritendinous cutaneous fibers 597
- simple complete syndactyly,
- preferred incisions for 629
- simple incomplete and complete syndactyly releases, correction of 620
- simple incomplete syndactyly, preferred incisions for 622
- syndactyly release, preferred incisions and techniques for 622
- thumbindex (first) web space anatomy and functional
- considerations **608**, 612
- transverse retinacular ligament (TRL) (septum) 599
- wrist and forearm incisions 629
 Z (Zed)-plasty, teaching the mechanics of 616
- zigzag incision concept 600
- Elective incisions for finger, hand, wrist, and forearm **596**
- Elective modified great toe transfer 92 Elective second toe transfer
 - analysis of the deficit **156**
- analysis of the deficit 156
 history and examination 156
- outcome 158
- preferred option 156
- reconstruction, sequence of 156
- treatment plan, formulation of 156
- Elective second toe transfer **156** *See also* Bilateral second toe transfer;
- Custom partial great toe transfer; Failing toe transfer; Great toe transfer; Isolated distal toe transfers; Microvascular toe transfer; Second toe transfer; Toe transfer; Trimmed great toe transfer; Triple toe transfer
- Elective thenar flap to ring finger
- analysis of the deficit 322
- history and examination 322
- outcome 322
- preferred option 322
- treatment plan, formulation of 322
 Elective thenar flap to ring finger 322
 Elective trimmed great toe transfer
- analysis of the deficit 161
- formulation of a treatment plan 161
- history and examination 161
- outcome 161
- preferred option 161
 Elective trimmed great toe transfer
- 161, 162 Elective trimmed/modified great toe
- transfer
- analysis of the deficit 91
- formulation of a treatment plan 91history and examination 91
- outcome 91
- preferred option 91
- Elective trimmed/modified great toe transfer **91**
- Emergency medical technician (EMT) 135

EMT, *see* Emergency medical technician (EMT) EPB, *see* Extensor pollicis brevis (EPB) Epigastric flap 684

- Epigastric flap + extensor reconstruction
- analysis of deficit 553
- formulation of treatment plan 553

Extensor mechanism and proximal

Extensor pollicis brevis (EPB) 10

Extrinsic flexor muscles 22

FA, see Fanconi anemia (FA)

- analysis of deficit 330

- preferred option 330

analysis of deficit 211

preferred option 211

- outcome 330

330.331

transfer

- outcome 213

transfer 211

outcome 108

Failing toe transfer

- outcome 378

toe transfer

273

Fascial flap

(FDP)

Fanconi anemia (FA) 268

and skin graft versus

- for dorsal surfaces 568

Fascial flap 563, 657

artery (FDMA) flap

fasciocutaneous flap 590

Fasciocutaneous flaps 213, 534, 671

FDM, see Flexor digiti minimi (FDM)

FDP, see Flexor digitorum profundus

FDMA flap, see First dorsal metacarpal

FCU, see Flexor carpi ulnaris (FCU)

Extrinsic tendon rebalancing 276

Failed initial revascularization and

- history and examination 330

reversed homodigital island flap

- treatment plan, formulation of 330

reversed homodigital island flap

Failed replant, groin flap + second toe

- formulation of treatment plan 213

Failed replant, groin flap + second toe

- formulation of a treatment plan 108

Failed replantation and secondary

oteoplastic reconstruction

analysis of the deficit 108

- history and examination 107

Failed replantation and secondary

Failed replants and osteoplastic

oteoplastic reconstruction 107

formulation of a treatment plan 377

See also Bilateral second toe transfer;

transfers: Microvascular toe transfer:

Custom partial great toe transfer:

Elective second toe transfer; Great

Second toe transfer; Toe transfer;

Trimmed great toe transfer; Triple

Fanconi anemia and early diagnosis

toe transfer: Isolated distal toe

preferred option 108

reconstruction 108

- analysis of the deficit 377

Failing toe transfer 375, 376

- history and examination 375

- history and examination 211

Failed initial revascularization and

Extensor pollicis longus (EPL) 140,

Extrinsic extensor tendon rebalancing

phalanx 21

153, 262

278

F

- history and examination 553
- outcome 555
- preferred option 553
 Epigastric flap + extensor
- reconstruction 553
- EPL, *see* Extensor pollicis longus (EPL) Evaluation phase, of treatment
- program **29** Execution phase, of treatment
- program **30** Expanded hyponychium of finger and

- history and examination 574

- outcome 574

- preferred option 574

with spare part 574

- analysis of the deficit 523

- history and examination 521

- reconstructive options 523

- treatment objectives 523

web space flap

- outcome 523

fingers

- outcome 530

fingers 528

- outcome 528

- outcome 519

10 10 18 630

518

18,285

262.362

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- preferred option 518

- preferred option 530

- preferred option 523

web space flap 521

- analysis of the deficit 528

- history and examination 528

reconstructive options 528

- thumb 302 Extensive lateral digital defect covered
- extensive lateral digital delect covered with spare part
 analysis of the deficit 574
 formulation of a treatment plan 574

Extensive lateral digital defect covered

Extensive longitudinal palmar loss of a

finger revascularized with a first

- formulation of treatment plan 523

Extensive longitudinal palmar loss of a

finger revascularized with a first

Extensive loss of palmar surface on two

formulation of a treatment plan 530

Extensive loss of palmar surface on two

Extensive palmar loss secondary to

- formulation of treatment plan 526

recurrent dupuytren disease

- history and examination 526

Extensive palmar loss secondary to

recurrent dupuytren disease 526

Extensive pulp loss of multiple fingers

- formulation of a treatment plan 518

Extensive pulp loss of multiple fingers

Extensor carpi radialis brevis (ECRB)

Extensor carpi radialis longus (ECRL)

Extensor carpi ulnaris (ECU) 488

140, 232, 262, 270, 291, 362

Extensor digitorum communis (EDC)

Extensor indicis proprius (EIP) 232,

- analysis of the deficit 526

- analysis of the deficit 518

- history and examination 518

FDQ muscle, see Flexor digiti quinti (FDQ) muscle FDS, see Flexor digitorum superficialis (FDS) Features of thumb 119 Fibonacci sequence 1, 23 Fiddler's muscle 23 Fifth finger transposition to thumb - analysis of deficit 250 - history and examination 250 - outcome 250 - preferred option 250 - treatment plan, formulation of 250 Fifth finger transposition to thumb 250.251 Fifth metacarpal transposition to thumb position 238 Finger to thumb transposition custom hybrid second toe + lateral great toe flap transfer to thumb 144 immediate trimmed toe reconstruction 142, 143 - phalangealization comparison 144 Finger to thumb transposition 140 Finger transposition - thumb polydactyly to -- analysis of the deficit 421 -- formulation of a treatment plan 423 -- history and examination 421 -- outcome 423 -- preferred option 421 - thumb polydactyly to 421 vascularized toe transfer versus 201 Fingers - critical zone II of 301 - loss of larger defects of 533 - neuro-sensory first web toe flap for restoration of palmar surface of 524 - pulp loss of 519 - thenar flaps for palmar pulp loss of 514 Fingers, see Index finger; Long finger; Ring finger Fingertip alignment 335 Fingertip injuries, skin grafts for - completely amputated fingertip, revascularization of 313.314 nonviable fingertip revascularization in a toddler 312, 313 Fingertip injuries, skin grafts for 311 - See also Adipofascial flap plus skin graft; Full-thickness hypothenar skin graft; Full-thickness skin graft (FTSG) Fingertip losses, terminology of, reconstructive objectives 45 Fingertip losses, terminology of 45 Fingertip terminology 302 Fingertips reattached as composite grafts 310 First (thumb-index) web space 40 First dorsal metacarpal artery (FDMA) flap - analysis of the deficit 576, 579 formulation of a treatment plan 576 579 - history and examination 576, 578 - outcome 576, 579

- preferred option 576, 579
 First dorsal metacarpal artery (FDMA) flap 111, 115, 135, 227, 479, 508, 510, 576, 577–578, 578–579, 593
- First web release, deepening of 107

First web space 137, 138 First web space and incision options for reconstruction 608 Firstweb space release, options for 610 "Fish mouth" type closure 72 Flap delay 107 Flexion arc of digits 2 Flexor carpi radialis (FCR) 10, 14 Flexor carpi ulnaris (FCU) 10, 488 Flexor digiti minimi (FDM) 492 Flexor digiti quinti (FDO) muscle 15 Flexor digitorum profundus (FDP) 22, 35, 140, 291, 362, 393, 459 Flexor digitorum superficialis (FDS) 35, 140, 153, 262, 362, 389, 459 Flexor pollicis brevis (FPB) 14, 129, 192 608 Flexor pollicis longus (FPL) 131, 140, 153, 459 Flexor retinaculum 14 Flexor tendon graft, proximal juncture of 78 Flexor tendon graft 77 Floating thumb 279 fMRI scans, see Functional magnetic resonance imaging (fMRI) scans Foot deformities 229 Foot donor site - complication 693 - with multiple toe transfers 449 Foot in constriction ring syndrome 417 Foot morbidity 390 Foot morbidity following great toe transfer - great toe harvest 227 - multiple toe harvest 230 - partial great toe and second toe harvest 229 - second toe harvest 227 - transposition of spare parts into the thumb position 241 Foot morbidity following great toe transfer 227, 228 Foot morbidity following toe transfer 401 Foot to hand transfer - analysis of deficit 256 - history and examination 256 - outcome 256 - preferred options 256 - reconstructive options 256 - treatment plan, formulation of 256 Foot to hand transfer 256 Forearm - fascial flap 555 - hemi-hand amputation and ectopic implantation into 462 - incisions 630 Forearm squeeze-compression maneuver 264 Formulation phase, of treatment program 29 FPB, see Flexor pollicis brevis (FPB) FPL, see Flexor pollicis longus (FPL) Free fasciocutaneous flap 530, 530, 635

- Free great toe pulp flaps
- adipofascial flap plus skin graft 586, 587
- immediate fascial flap plus skin graft to lateral border of the thumb for gunshot wound 588, 589

Free great toe pulp flaps 585 Free great toe pulp transfer to thumb 512 Free lateral great toe pulp flap to thumb analysis of the deficit 510 - formulation of a treatment plan 511 - history and examination 510 - outcome 511 preferred options 511 Free lateral great toe pulp flap to thumb 510 Free pulp transfers 497 Free second toe transfer 201 Free split-thickness grafts 306 Free transfer of skin fasciocutaneous flans 544 Free vascularized nail bed transfers 306 FTSG, see Full-thickness skin graft (FTSG) Full finger extension 19 Full-thickness skin graft (FTSG) 82 Full-thickness hypothenar skin graft - analysis of the deficit 48 - history and examination 48 - outcome 48 - preferred option 48 treatment plan, formulation of 48 Full-thickness hypothenar skin graft 48 - See also Adipofascial flap plus skin graft; Fingertip injuries, skin grafts for; Full-thickness skin graft (FTSG) Full-thickness skin graft (FTSG) 46, 48, 49, 75, 305, 308, 310, 325, 400, 472, 497, 512, 543, 553 - See also Adipofascial flap plus skin graft; Fingertip injuries, skin grafts for; Full-thickness hypothenar skin graft: Functional and aesthetic subunits of hand 38 Functional cutaneous units of finger and thumb 40 - of hand and fingers 39 Functional deficit degloving and avulsion injuries of fingers and thumb 634 - degloving and mutilation injuries of hand and wrist 657 - longitudinal and oblique loss of the fingers and thumb involving the lateral surface 571 - longitudinal palmar defects involving the fingers and thumb 495 - transverse zone IX of thumb 249 - transverse zone VI of finger 428 - transverse zone VIII of thumb 217 Functional magnetic resonance imaging (fMRI) scans 38, 181, 505

- G
- Gangrene, vascular insufficiency, V to Y, and amputations
- analysis of deficit 358
- history and examination 358
- outcome 358
- preferred option 358
- treatment plan, formulation of
 - 358

Gangrene, vascular insufficiency, V to Y, and amputations 358, 359 Gilles's principle 86 Glabrous full-thickness skin graft 311 Glabrous skin grafts 40, 51, 51 Glomus cells 304 Golden ratio 4 Golgi apparatus 25 Grayson fibers 570 Gravson ligaments 597, 604 Great toe and thumb, anatomic differences between 120 Great toe harvest 227 Great toe transfer - analysis of deficit 131 - elective trimmed/modified 91 - foot morbidity following -- great toe harvest 227 -- multiple toe harvest 230 -- partial great toe and second toe harvest 229 -- second toe harvest 227 -- transposition of spare parts into the thumb position 241 - foot morbidity following 227 - history and examination 131 - immediate modified/trimmed 89 - in a child

- -- anatomical deficit, analysis of 125
- -- history and examination 124
- -- preferred option 125
- -- treatment plan, formulation of 125
- in a child 124, 127
- modification of 165
- preferred option 131
- treatment plan, formulation of 131
- with dorsalis pedis pedicle
- -- analysis of the deficit 159
- -- formulation of a treatment plan **159**
- -- history and examination 159
- -- outcome 159
- preferred option 159
- with dorsalis pedis pedicle 159, 160
- Great toe transfer **122**, **131**, *132*, 152, **227**, 453–454
- See also Bilateral second toe transfer; Custom partial great toe transfer; Elective second toe transfer; Failing toe transfer; Isolated distal toe transfers; Microvascular toe transfer; Second toe transfer; Toe transfer; Trimmed great toe transfer; Triple

toe transfer

Great toe wraparound 152

Groin flap 205, 207, 211, 223, 224, 681 Groin flap + modified (trimmed) great toe transfer + revision

- analysis of deficit 205
- formulation of treatment plan 205
- history and examination 205
- outcome 205
- preferred option 205
- Groin flap + modified (trimmed) great toe transfer + revision **205** Groin flap coverage *105*

Groin flap transfer to the hand - debulking and collateral ligament

- reconstruction 107
- dissection and inset of groin flap 105
- planning 105

Groin flap transfer to the hand 105, 105

- Groin flap with complication followed by ALT flap + modified toe transfer - analysis of deficit **207**
- analysis of deficit 207
 formulation of treatment plan 207
- history and examination 207
- outcome 207
- preferred option 207
- Groin flap with complication followed by ALT flap + modified toe transfer 207
- Groin flap, modified (trimmed) great toe transfer
- analysis of the deficit 223
- formulation of a treatment plan 225
- history and examination 223
- outcome 225
- preferred option 225
 Groin flap, modified (trimmed) great
- toe transfer **223**, 224 Groin pedicle flap 103, 104
- Groin pedicle flap and trimmed great
- toe
- analysis of the deficit 172
- formulation of a treatment plan 172
- history and examination 172
- outcome 174
- preferred option 172
 Groin pedicle flap and trimmed great toe 172

Н

Hand

- dorsal cutaneous units of 609
- functional and aesthetic subunits of 38
- variable transverse arches of 11
- visual stimuli of the 38Vitruvian interpretation of 3
- Hand, see Amputated hand, cosmetic
- hand prosthesis for; Metacarpal hand; Unilateral metacarpal hand Hand allotransplantation
- analysis of deficit 296
- formulation of treatment plan 296
- history and examination 295
- outcome 297
- preferred option 296
 Hand allotransplantation 295, 295, 297
 Hand amputation 298
 Hand anatomy, essence of 1
- Hand incisions
- dorsal 607
- palmar 604

Hand prosthesis 298

Hand reattachment at wrist level

- immediate transfer of long finger to forearm following crush mutilation 292, 293
- parascapular flap + second toe
- transfer 288, 289 Hand reattachment at wrist level 288
- Hand replantation 218
- Hand, anatomical characteristics of
- arterial system 25
- digital extension
 digital flexion 23
- -- extrinsic flexor muscles 22
- -- thumb and digital flexion 22
- -- thumb flexion 24

718

- digital extension 19

- integument 28
- intrinsic muscles 14
- lymphatic system 28musculotendinous system 13
- nervous system 24
- skeletal system 5
- vascular system 25
- venous system 27
- Hand, anatomical characteristics of 4
- Hand-powered K-wires 141
- Hemi-hand amputation and ectopic implantation into forearmanalysis of deficit 462
- analysis of deficit 402
 history and examination 462
- outcome 462

509

transfer

- outcome 63

(littler flap) 505

- preferred option 462
- Hemi-hand amputation and ectopic implantation into forearm 462
- Hemi-hand amputation, ectopic placement of 463
- Hemi-hand prosthesis for total thumb and index loss 283
- Heterodigital flap 100
- Heterodigital island flap 46, 306, 505
- Heterodigital island "kite" or "flag" flaps from dorsal to palmar surfaces

Heterodigital neurovascular island flap

Heterodigital neurovascular island

- analysis of the deficit 61

Heterodigital ring-to-thumb

- analysis of the deficit 94

- preferred option 94

- treatment plan 94

- history and examination 94

- reconstructive options 94

Heterodigital ring-to-thumb

Hilgenfeldt's transposition 141

Hirudo medicinalis leech 79

Hoyer-Grosser organs 304

Hyponychial atrophy 551

- and nail biters 552

injury to 42

301

49

– of thumb 43 68

Hypothyroidism 29

Hyper-callosity 227

Hyponychium

"H"-shaped configuration 44

Heterodigital vascular island flap 544

History of thumb reconstruction 175,

Homodigital flap 306, 320, 366, 541,

Homodigital island flaps 306, 332, 362

Hyperpigmented cross-finger flap 521

- and its unique characteristics 551

- of thumb, complete severance/

- transverse zones I and II of finger

Hypothenar full-thickness skin graft

Hypothenar group of muscles 15

Hyponychium 301, 302, 551

transposition 94, 95

- preferred option 61

transfer 60, 62

transposition

- outcome 94

175

544

- history and examination 60

Heterodigital neurovascular island

– outcome 155

Т

- preferred option 155
- treatment plan, formulation of 155
 Immediate second toe transfer and

Immediate fascial flap plus skin graft to

lateral border of the thumb for

analysis of the deficit 588
formulation of a treatment plan 588

- history and examination 588

- reconstructive options 588

gunshot wound 588, 589

- analysis of the deficit 89

- history and examination 89

Immediate fascial flap plus skin graft to

Immediate modified/trimmed great toe

- formulation of a treatment plan 89

Immediate modified/trimmed great toe

Immediate second toe transfer and

lateral border of the thumb for

gunshot wound

- outcome 588

transfer

- outcome 89

transfer 89

- preferred option 89

index ray resection

- analysis of the deficit 155

- history and examination 154

-- formulation of a treatment plan

-- history and examination 373

Immediate versus delayed thumb

Immediate "custom-made" great toe to

- formulation of a treatment plan 87

Immediate "custom-made" great toe to

Incompletely amputated parts and

Index and long fingers, second toe

- formulation of a treatment plan 391

- analysis of the deficit 390

- history and examination 390

Index and long fingers, second toe

Index and ring fingers, second toe

- formulation of a treatment plan 392

374

thumb

- outcome 87

thumb 87

transfers to

- outcome 391

transfers to

- outcome 393

Index finger

349.351

Index finger 30

- outcome 484

transposition

- outcome 198

194

- outcome 194

Index finger amputation

- analysis of the deficit 483

- formulation of treatment 483

- history and examination 483

Index finger amputation 483

Index finger damage to thumb

- history and examination 196

formulation of a treatment plan 198

Index finger transposition to the thumb

formulation of a treatment plan

- history and examination 192

- analysis of deficit 198

preferred option 198

Index finger damage to thumb

transposition 196 197

- analysis of deficit 192

- preferred option 194

- preferred option 392

transfers to 392

web space flap to 549

- preferred option 390

transfers to 390, 391

- analysis of the deficit 392

- history and examination 392

Index and ring fingers, second toe

Index digit, lateral great toe and first

- broad thenar flap to 325, 326

- custom partial great toe transfer to

- crush injury isolated to 484

- onychocutaneous flap to 549

- second toe to index finger as

primary reconstruction 346

- See also Long finger; Ring finger

second toe transfer to 365, 365

- preferred option 87

muscle loss 676

-- outcome 374

-- preferred option 374- elective second toe transfer to left

long finger 373, 374

reconstruction 93, 370

- analysis of the deficit 87

- history and examination 87

- index ray resection **154** Immediate temporoparietal fascial flap (TPF) + skin graft coverage of
- complex dorsal injuries
- analysis of deficits 565
- formulation of a treatment plan 565
- history and examination 563
 options for reconstruction 565
- outcome 565
- preferred option 565
- Immediate temporoparietal fascial flap (TPF) + skin graft coverage of
- complex dorsal injuries 563 Immediate trimmed toe reconstruction
 - analysis of deficit 142
 - formulation of treatment plan 142
 - history and examination 142
- outcomes 142
- preferred option 142
- Immediate trimmed toe
- reconstruction **142**, *143* Immediate trimmed/modified toe
- transfer
- analysis of the deficit 109
- formulation of a treatment plan 111
- history and examination 109
- outcome 111
 preferred option 111
- Immediate trimmed/modified toe
- transfer **109** Immediate versus delayed thumb
- reconstruction – elective
- -- analysis of the deficit 373
- --- formulation of a treatment plan 373
- -- history and examination 371
 -- outcome 373

- elective second toe transfer to left

-- analysis of the deficit 374

-- preferred option 373

- elective 371

long finger

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- technique of index transposition 194
- Index finger transposition to the thumb **192**
- Index metacarpal transposition, metacarpal distraction lengthening 236
- Index rotation-recession osteotomy
- analysis of deficit 265
- formulation of treatment plan 265history and examination 265
- outcome 265
- preferred option 265
- Index rotation-recession osteotomy 265, 266
- Index stump transposition + prosthesis **239** Index to thumb transposition as a neurovascular island + free flap to
- first web space - analysis of the deficit **580**
- formulation of a treatment plan 580
- history and examination 580
- outcome 580
- preferred option 580
 staged execution 580
 Index to thumb transposition as a neurovascular island + free flap to first web space 580
 Index transposition 180, 230, 231, 232
 Initial debridement 447
 Integument 28
- Interdigital web release, evolution of
- incision placement for **620** Interdigital web spaces 608, 609, 618, **618**, 619, 620
- Interdigital web, geometry and relationships of **618** Internal review board (IRB) approval
- 461 Interosseous dental wires 141
- Interphalangeal (IP) joint 48, 99, 129, 148, 170, 217, 273, 467, 503
- See also Carpometacarpal (CMC) joint; Distal interphalangeal (DIP) joint; Metacarpophalangeal (MP) joint; Proximal interphalangeal (PIP) joint
- Intradigital web spaces 39
- Intramembranous ossification 2 Intraosseous ligaments of distal
- phalanx 44 Intrinsic muscles of thumb 14, 128, 129
- Inverted-"U" pattern 44
- IP joint, see Interphalangeal (IP) joint
- Ipsilateral quad toe transfer of four toes to one hand
- analysis of the deficit 410
- formulation of a treatment plan **410**
- history and examination **410**
- outcome 413
- preferred option 410
- Ipsilateral quad toe transfer of four toes to one hand **410**, *411*
- Isolated distal toe transfers
- custom partial great toe transfer to index finger **349**, *351*
- custom partial great toe transfer to left long finger **351**
- Isolated distal toe transfers **348** *See also* Bilateral second toe transfer;
- Custom partial great toe transfer;

Elective second toe transfer; Failing toe transfer; Great toe transfer; Microvascular toe transfer; Second toe transfer; Toe transfer; Trimmed great toe transfer; Triple toe transfer Isolated ray losses 487

J

Joint formation in the hand 2

K

K-wire 488 Kaplan's line 25 Kirschner wire (K-wire) fixation 140

L

LABCN, see Lateral antebrachial cutaneous nerve (LABCN) Large pulp defects 585 Lateral antebrachial cutaneous nerve (LABCN) 565 Lateral brachial cutaneous nerve of the forearm (LBCN) 565 Lateral femoral cutaneous nerve of the thigh (LFCN) 565 Lateral great toe and first web space flap to index digit - analysis of the deficit 549 - formulation of treatment plan 550 - history and examination 549 - outcome 550 - preferred option 550 Lateral great toe and first web space flap to index digit 549 Lateral longitudinal defects 34 Lazarus finger 378, 382 LBCN. see Lateral brachial cutaneous nerve of the forearm (LBCN) Left long finger, custom partial great toe transfer to 351 Legacies - of American civil war and era of microsurgery 593 - of civil war 595 - of microsurgery 595 Length of thumb 447 LFCN, see Lateral femoral cutaneous nerve of the thigh (LFCN) Lifeboat 30 Ligament support 7 Ligaments 7 Limited rotation-recession osteotomy type IIIB thumb hypoplasia treated with second toe transfer 268, 269 - type V thumb hypoplasia treated with formal pollicization 270, 271 Limited rotation-recession osteotomy 267 Liposuction 668 Lister algorithm 64 LM, see Lymphatic malformations (LM) Local advancement flap closure + FTSG in emergency setting analysis of deficit 80 - history and examination 80 - options 80 - outcome 80

 preferred option and formulation of treatment plan 80

- Local advancement flap closure + FTSG in emergency setting **80**
- Local bipedicle advancement closure + FTSG as an elective reconstruction
- analysis of deficit 82
- history and examination 82
 options for reconstruction 82
- outcomes 82
- preferred option 82
- Local bipedicle advancement closure + FTSG as an elective reconstruction 82
- Local bipedicle island flap
- advancement + FTSG 82
- Local flap closure 50, 50, 71
- Local island flap transfer for other regions of the palm
- extensive loss of palmar surface on two fingers 528
- extensive palmar loss secondary to recurrent dupuytren disease 526
- Local island flap transfer for other regions of the palm 526

Local vascular island flap 635 Long finger

- cross-hand transfer of
- -- analysis of the deficit **378**
- -- formulation of a treatment plan 380
- -- history and examination 378-- outcome 380
- -- preferred option **380**
- cross-hand transfer of 378, 379
- damage to thumb transposition
- -- analysis of deficit 198
- -- formulation of treatment plan 199
- -- history and examination 198-- outcome 200
- preferred option 199
- damage to thumb transposition **78**,
- 198elective second toe transfer to 372
- radial forearm flap to 558
- radial forearm flap to 558
 second toe transfers to 390, 391
- transfer to forearm following crush mutilation
- -- analysis of deficit 292
- -- formulation of treatment plan
- 292
 --- history and examination 292
- -- outcome 292
- -- preferred option 292
- transfer to forearm following crush mutilation 292, 293
- Long finger, *see* Index finger; Ring finger
- Longitudinal and oblique loss of the fingers and thumb involving the lateral surface
- anatomy 570
- chest pedicle flap to lateral thumb surface 591
- deformity 571
- extensive lateral digital defect
- covered with spare part 574
- FDMA flap to index 578, 578
 first dorsal metacarpal artery flap (FDMA) 579
- first dorsal metacarpal artery flap
 (FDMA) to first web space 570
- (FDMA) to first web space 576 - free great toe pulp flaps 585
- functional deficit 571

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

-- of American civil war and era of

- legacies

- microsurgery 593, 594 -- of civil war 595
- -- of microsurgery **595**

injuries 575

thumb 583

- anatomy 541

- deformity 542

transfers 550

- functional deficit 543

characteristics 551

- hyponychium and its unique

lateral surface 570

the fingers and thumb

- pedicle flaps and lateral defects 593
- reattachment of the amputated part as a composite graft 572, 573

- reconstruction, principles of 571

- reconstructive objectives 571

- spare parts and lateral oblique

transposition to lateral defect of

Longitudinal and oblique loss of the

fingers and thumb involving the

Longitudinal dorsal defects involving

dorsal nail reconstruction with toe

- fascial flaps for dorsal surfaces 568

- immediate temporoparietal fascial

flap (TPF) + skin graft coverage of

- lateral great toe and first web space

-- of thumb with trimmed second toe

complex dorsal injuries 563

flap to index digit 549

transfer 547, 548

around 545, 546

dissection 565

and hand 561, 562

- nuances of TPF fascial flap

- nail complex reconstruction

-- with modified great toe wrap-

- nail complex reconstruction 552

- parascapular flap for defect of digit

- principles of reconstruction 543

- treatment of larger combined losses

- reconstructive objectives 543

of fingers on dorsal or palmar

Longitudinal dorsal defects involving

Longitudinal palmar defects involving

- dorsal artery perforator (DAP) flaps

palmar-to-dorsal communicating

- dorsalis pedis free fasciocutaneous

heterodigital island "kite" or "flag"

heterodigital neurovascular island

- local island flap transfer for other

loss of larger defects of finger 533

719

flaps from dorsal to palmar surfaces

- reconstructive options 544

surfaces of the hand 568

the fingers and thumb 541

the fingers and thumb

and their variations 535

- dorsal metacarpal artery and

- free great toe pulp transfer to

- functional deficit 495

flap (littler flap) 505

regions of the palm 526

- anatomy 494

- deformity 494

arteries 535

flap 530.530

thumb 512

509

- reconstructive options 571

- neuro-sensory first web toe flap for restoration of palmar surface of finger 524
- old versus the new techniques 534palmar advancement flaps for the
- thumb 507pulp and glabrous surface reconstruction 534
- pulp compartments 534
- pulp loss of the fingers 519
- pulp vascularity 534
- reconstruction methods 535
- reconstruction, principles of 495
- reconstructive objectives 495
- reconstructive options 495
- thenar flaps for palmar pulp loss of the finger 514
- thumb pulp loss and classic heterodigital neurovascular island flap 503, 504, 507
- traumatic avulsion of the entire thumb pulp with poor outcome 499, 500
- traumatic distal pulp loss 497, 498unsatisfactory free medial instep-
- free flap **501**, 502
- Longitudinal palmar defects involving the fingers and thumb **494** Lumbrical muscle function **22**
- LVM, see Lymphaticovenous malformations (LVM)
- Lymphatic malformations (LM) 492
- Lymphatic system 28
- Lymphaticovenous malformations (LVM) 492

Μ

- M&M conference, *see* Mortality and morbidity (M&M) conference
 MABCN, *see* Medial antebrachial cutaneous nerve (MABCN)
 Magnetic resonance imaging (MRI) scans 29
 Mallet deformity 21
 Mammalian target of rapamycin (mTOR) 247
 Mechanism of injury (MOI) 535
 Mechanoreceptors 44
 Medial antebrachial cutaneous nerve (MABCN) 565
 Medicinal leeching 64, 75, 79, 79, 80
- Medicine intensive care unit (MICU) 358
- Meissner corpuscles 25
- Meralgia paresthetica 105
- Metacarpal distraction lengthening + creation of first web space
- analysis of the deficit 147
- formulation of a treatment plan 147
- history and examination 144
- outcome 147
- preferred option 147
 Metacarpal distraction lengthening +
- creation of first web space 144
- Metacarpal hand
- bilateral 448

720

- classification of, transverse zone VI of finger 428
- classification of 428
- following burn injuries
 double second-third toe transfer
 445, 446

- -- simultaneous unilateral double toe **443**, 444
- -- unilateral metacarpal hand 442
- following burn injuries 441
- transverse zone VI of finger 428, 429
 unilateral 447
- Metacarpal hand 428, 429
- See also Amputated hand, cosmetic hand prosthesis for; Unilateral metacarpal hand
- Metacarpal hand treated with digital transposition, Type IIB
- analysis of the deficit 470
- formulation of a treatment plan 472
- history and examination 470
- outcome 473
- preferred option 472
 Metacarpal hand treated with digital
- transposition, Type IIB **470** Metacarpal hands (Type II), treatment strategies in **476**
- Metacarpal head 274, 276, 286 Metacarpal lengthening 447
- Metacarpal level **459, 489** Metacarpal resection, osteotomy, for
- type IIA metacarpal hand
- analysis of the deficit 432
 formulation of a treatment r
- formulation of a treatment plan 433history and examination 431
- outcome **433**
- preferred option 432
- Metacarpal resection, osteotomy, for type IIA metacarpal hand 431
- Metacarpal-like hand 690, 690, 692 Metacarpophalangeal (MP) joint 5, 9, 23, 35, 99, 129, 163, 170, 200, 273, 288, 310, 362, 377, 427, 431, 448, 451, 457, 467, 503, 570, 599, 657
- See also Carpometacarpal (CMC)
 joint; Distal interphalangeal (DIP)
 joint; Interphalangeal (IP) joint;
- Proximal interphalangeal (PIP) joint Microsurgery, legacies of **595**
- Microsurgical cripple 137 Microsurgical salvage in older patient
- avulsion amputation of the thumb (class IVd) 650
- avulsion amputation of the thumb groin flap 652, 653
- Microsurgical salvage in older patient
- Microsurgical salvage in zones III and
- primary modified second toe to long finger and secondary pulp
- reduction **344**, 345 - second toe to index finger as
- primary reconstruction 346, 347 Microsurgical salvage in zones III and IV 342
- Microsurgical toe to hand transfer 100 Microvascular reattachment
- analysis of the deficit 74
- execution of a treatment plan 74
- history and examination 74
- in distal thumb and finger 64of amputated part
- outcome **102**
- -- technique of 101
- treatment plan, formulation of
 101
- of amputated part 101

- outcome 75
- preferred option 74

Microvascular reattachment 74, 74 Microvascular revascularization 51 MRI scans, see Magnetic resonance

mTOR, see Mammalian target of

analysis of the deficit 319

- history and examination 319

technical considerations 321

- treatment plan, formulation of 319

Multiple digital degloving amputations

- formulation of a treatment plan 681

Multiple digital degloving amputations

of the index and thumb 679, 680

Multiple large defects on the thumb,

fingers, and palm covered with

- formulation of a treatment plan 531

Multiple digital losses, bilateral

mutilation with 662

- analysis of the deficit 531

- history and examination 531

- reconstructive options 531

Multiple large defects on the thumb,

fingers, and palm covered with

transposition, second toe transfer for

formulation of a treatment plan 413

transposition, second toe transfer for

Multiple toe transfer following vascular

- formulation of treatment plan 223

Multiple toe transfer following vascular

catastrophe in infancy 220, 221

constriction ring syndrome (CRS)

- formulation of a treatment plan 405

Multiple toe transfers for child with

history and examination 405

Multiple toe transfers for child with

constriction ring syndrome (CRS)

Multiple toe transfers to three digital

- formulation of a treatment plan 368

analysis of the deficit 368

- history and examination 368

preferred option 368

- analysis of the deficit 405

- history and examination 220

scapular flap

- outcome 533

CRS

- outcome 413

CRS 413

- preferred option 531

scapular flap 531

Multiple local releases, index

- analysis of the deficit 413

Multiple local releases, index

Multiple toe harvest 230

catastrophe in infancy

- analysis of deficit 220

- preferred option 223

outcome 223

- outcome 405

amputations

- outcome 368

406

- preferred option 405

- history and examination 413

- history and physical examination

Multiple cross-finger flaps 319, 320

of the index and thumb

- analysis of the deficit 681

imaging (MRI) scans

rapamycin (mTOR)

- preferred option 319

- outcome 320

679

- outcome 681

- preferred option 681

Multiple cross-finger flaps

- Microvascular salvage in critical digital zones II and III - antegrade homodigital island
- advancement flap **317**, 318 - V-to-Y advancement flap of a finger
- 315, 316 Microvascular salvage in critical digital
- zones II and III **314**, 315 Microvascular toe to hand transfer
- 152, 635
- Microvascular toe transfer 174, 249, 390, 395, **431**, 458
- See also Bilateral second toe transfer;
 Custom partial great toe transfer;
 Elective second toe transfer; Failing toe transfer; Great toe transfer;
 Isolated distal toe transfer; Second toe transfer; Toe transfer; Trimmed great toe transfer; Triple toe transfer
- Microvascular transfers at thumb level IX 262
- MICU, *see* Medicine intensive care unit (MICU)
- Mid-axial, mid-lateral, and oblique lines of the finger and thumb 599
- Mid-palmar level, thumb and hand reattachment at
- groin flap, modified (trimmed) great toe transfer **223**, 224
- multiple toe transfer following vascular catastrophe in infancy 220, 221
- Mid-palmar level, thumb and hand reattachment at **220** Mid-proximal metacarpal level,
- reattachment of the hand amputated at

reattachment of the hand amputated

Midline pulp reduction of lesser toe

Mitek bone anchor fixation 109

Modified wraparound and trimmed

MOI, see Mechanism of injury (MOI)

Monodactyly associated with cleft

hand/cleft foot syndrome

- history and examination 253

- treatment plan, formulation of 253

Monodactyly associated with cleft

Morbidity and mortality (M&M)

Mortality and morbidity (M&M)

MP joint, see Metacarpophalangeal

hand/cleft foot syndrome 253

great toe reconstruction, technique

- analysis of the deficit 459

treatment plan 459

Midline reduction 167

Moebius' syndrome 242

- analysis of deficit 253

- preferred options 253

conference 461, 521

conference 371

(MP) joint

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- outcome 253

- history and examination 459

Mid-proximal metacarpal level,

outcomes 459
 preferred options 459

at 459

404

of 91

- preferred option 509

Palmar V-to-Y advancement

analysis of the deficit 55

- history and examination 55

flap 508, 510

Palmar skin 28, 41

- outcome 57

- outcomes 291

hand

- outcome 563

hand 561, 562

harvest 229

- outcome 585

- preferred option 585

preferred option 55

- analysis of deficit 291

preferred option 291

surgical execution 291

- analysis of deficits 563

- preferred options 563

transfer 288, 289

Parascapular flap + second toe

Palmar pulp loss with FDMA island

- See also Avulsion of all palmar skin

- formulation of a treatment plan 57

Palmar V-to-Y advancement 55, 56

Parascapular flap + second toe transfer

- formulation of treatment plan 291

Parascapular flap for defect of digit and

- formulation of treatment plan 563

Parascapular flap for defect of digit and

- formulation of a treatment plan 585

- history and examination 561

Parasitic thumb following failed

Partial great toe and second toe

revascularizations 136

Partial great toe pulp transfer

- analysis of the deficit 585

- history and examination 583

Partial great toe pulp transfer 583

Partial index transposition 232

Partial long metacarpal resection

- history and examination 485

- reconstructive options **485**

Partial long metacarpal resection

Partially attached thumb tip 50

Proper digital artery (PDA)

Pedicle fasciocutaneous flaps 689

- formulation of treatment plan 205

Pedicle flap transfer + second toe

- history and examination 203

Pedicle flap transfer + second toe

Pedicle flaps and lateral defects 593

Peritendinous cutaneous fibers 597

Phalangeal hand, reconstruction of a

Phalangeal level, prosthetic wear at

721

PFFD, see Proximal focal fibular

Peritendinous cutaneous peritendinous

- analysis of deficit 204

- preferred option 205

transfer

- outcome 205

transfer 203

fibers 541

deficiency (PFFD)

Phalangeal length 176

finger in 397

360

PDA, see Palmar digital artery (PDA);

followed by index transposition 485

analysis of deficit 485

followed by index transposition

- history and examination 288

- Multiple toe transfers to three digital amputations **368**
- Multiple toe transfers transfers for child with constriction ring syndrome (CRS) **405** Musculotendinous system **13**
- Mutilated hand 690–691 Mutilating avulsion amputation of all
- finger transfer – analysis of the deficit **687**
- formulation of a treatment plan 687
- history and examination 687
- outcome 689
- preferred option 687
- Mutilating avulsion amputation of all finger transfer **687**, 688 Mutilating injuries **684**
- Mutilation 657
- Mutilation and multiple digital losses
- mutilating avulsion amputation of all finger transfer 687, 688
- skin grafting followed by phalangealization and first web deepening 685, 686
- Mutilation and multiple digital losses 684

Ν

Nail and hammer syndrome 215 Nail biters, hyponychium and 552 Nail complex of thumb 17, 67 Nail complex reconstruction

- complex, compound dorsal digital injury following failed groin flap 557
- epigastric flap + extensor reconstruction 553
- of thumb with trimmed second toe transfer
- -- analysis of deficit 547
- -- formulation of treatment plan 547
- -- history and examination 547
- -- outcome 547
- -- reconstructive options 547
- of thumb with trimmed second toe transfer 547, 548
 radial forearm fascial flap + STSG to
- the thumb 555 - third dorsal metacarpal artery flap to
- a finger 559, 560 - with modified great toe wrap-
- around
- -- analysis of deficit 545
- -- formulation of treatment plan 545-- history and examination 545
- -- outcome 545
- reconstructive options 545with modified great toe wrap-
- around 545, 546 Nail complex reconstruction 352, 552 Nail complex, transverse zones I and II of finger 303 Nail deformity 543 Nail matrix - and dorsal soft tissues 44 - reconstruction 352, 353 Nail matrix 67, 68 Nature's exquisite design 27 Nature's Fibonacci sequence 68
- Neonatal vascularized reattachment
- 64
- Nerve repair 31

- Nervous system 24 Neuro-sensory first web toe flap for restoration of the palmar surface of the finger 524 Neuromas 551
- Neurovascular bundle 570 Neurovascular island transfer
- heterodigital
- analysis of the deficit 61
- history and examination 60
- outcome 63
- preferred option 61
- Neurovascular island transfer, heterodigital **60**, 62
- Nonvascularized toe phalangeal transfers 100, **451**
- Nonvascularized toe phalanx, secondary distraction lengthening of the thumb
- analysis of the deficit 183
- formulation of a treatment plan 183
- history and examination 183
- outcome 183
- preferred option 183
- Nonvascularized toe phalanx, secondary distraction lengthening of the thumb **183** Nonviable fingertip revascularization in
 - a toddler
- analysis of the deficit 312
- history and examination 312outcome 312
- preferred option 312
- treatment plan, formulation of **312**
- Nonviable fingertip revascularization in a toddler **312**, *313*

0

- Oblique longitudinal defects of thumb, fingers, and hand
- dorsal longitudinal defects 34
 lateral longitudinal defects 34
- palmar longitudinal defects 34
- Oblique longitudinal defects of thumb, fingers, and hand **34**
- Oblique retinacular ligament (ORL) 18, 19, 570, 599, 599
- ODQ muscle, *see* Opponens digiti quinti (ODQ) muscle
- One-digit hand 259
- One-fingered hand 260 Onychocutaneous flap to index finger
- 549 OP, see Opponens pollicis (OP)
- Opponens digiti quinti (ODQ) muscle 15
- Opponens pollicis (OP) 14, 129 ORL, *see* Oblique retinacular ligament
- (ORL)
- Ossification stage 2
- Osteoplastic principles 174
- Osteoplastic reconstruction
- analysis of the deficit 96, 171formulation of a treatment plan 96,
- 172 - history and examination **95**, 171
- outcome 96
- preferred option 172
- Osteoplastic reconstruction **95**, 96, **97**, 100, 152, **171**, 363, **430**, 434, 458 Osteoplastic thumb reconstruction *96* Osteosynthesis 131

Painful neuromas 489

Ρ

- Painful scar and RSD treated with cross-finger fascial flap + STSG
- analysis of the deficit 518
- formulation of treatment plan 518
- history and examination 517outcome 518
- Painful scar and RSD treated with
- cross-finger fascial flap + STSG 517 Painful thumb
- palmar V-to-Y advancement
- -- analysis of the deficit 55
- -- formulation of a treatment plan 57
- -- history and examination 55
- -- outcome 57
- -- preferred option 55- palmar V-to-Y advancement 55, 56
- Painful thumb **55** Painful thumb tip 54
- Painful, parasitic thumb following replantation
- analysis of the deficit 135
- formulation of a treatment plan 135
- history and examination 135

Painful, parasitic thumb following

Palm. venous malformation of 591

Palmar bipedicle advancement flap +

Palmar incisions for extensive vascular

Palmar interosseous muscles 17

Palmar longitudinal defects 34

- analysis of the deficit 524

- history and examination 524

preferred treatment 524

- analysis of the deficit 514

- preferred options 514

- history and examination 513

- reconstructive objectives 514

- analysis of the deficit 509

- history and examination 508

Palmar oblique pulp loss and thenar

Palmar pulp loss with FDMA island flap

formulation of a treatment plan 509

homodigital flap 524

Palmar loss covered with antegrade

Palmar oblique pulp loss and thenar

- formulation of a treatment plan 514

Palmar island advancement flap 81

Palmar loss covered with antegrade

formulation of a treatment plan 524

Palmar cutaneous surfaces 40

Palmar digital artery (PDA) 25

Palmar digital incisions 602

Palmar hand incisions 604

Palmar incisions 606

malformation 607

homodigital flap

- outcome 525

- outcome 514

flap 513

outcome 509

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

flap

Palmar advancement flaps for the

- outcome 136

thumb 507

bone graft 83

preferred option 135reconstructive options 135

replantation 135

Palmar aponeurosis 675

- Phalangeal thumb, complete loss of **158**
- Phalangealization *130*, **144**, *146*, 159, 174–176, 181, 397, 433, **433**, 689 pik3CA genetic abnormality **246**

PIP joint, *see* Proximal interphalangeal (PIP) joint

Plaster molds, value of 264 Plummer–Vinson syndrome 29 Polar axis and zigzag incisions 598

Polliciization for congenital differences **274**, *275*

Pollicization

- long-term outcomes of 280
- thumb prosthesis
- -- analysis of deficit 283
- formulation of treatment plan
 283
- -- history and examination 283-- outcome 283
- -- preferred option 283
- thumb prosthesis 283
- Pollicization 260, 274, 280, 280
- Posttraumatic stress disorder (PTSD)
- 109, 668 Potential complications and patient
- expectationspedicled second toe to fifth digit transfer
- -- analysis of the deficit **380**
- formulation of a treatment plan 381
- -- history and examination 380- pedicled second toe to fifth digit
- transfer **380** Potential complications and patient expectations **380**
- Primary amputation closure and secondary distraction lengthening
- analysis of the deficit 72
- formulation of a treatment plan 72
- history and examination **72**
- outcome 72
- preferred option 72
- Primary amputation closure and secondary distraction lengthening 72
- . 12
- Primary closure
- options for reconstruction 72skin closure and nerves 72
- Primary closure **72**
- Primary modified second toe to long

finger and secondary pulp reduction

- analysis of the deficit 344
- history and examination 344
- outcome **346**
- preferred option 344
- treatment plan, formulation of 344
 Primary modified second toe to long finger and secondary pulp reduction 344, 345

Professional musicians 317 "Propellor type" flaps 535 Proper digital artery (PDA) 27, 35 Prophylactic antibiotics 89

- Prosthesis
- analysis of the deficit 98, 283
 formulation of treatment plan 98,
- hormulation of treatment plan 98
 283
 history and examination 97, 283
- outcome **98**, **283**
- preferred option 98, 283
- Prosthesis 97, 98, 283

722

Prosthetic wear at phalangeal level 360

- Proximal focal fibular deficiency (PFFD) 256
- Proximal interphalangeal (PIP) joint 15, 17, 18, 22–23, 34–35, 37, 84, 113, 122, 192, 256, 278, 310, 362, 375, 378, 385, 387–389, 426–427, 431, 461, 507, 514, 535, 542, 553, 559, 563, 599, 620, 634
- See also Carpometacarpal (CMC) joint; Distal interphalangeal (DIP) joint; Interphalangeal (IP) joint; Metacarpophalangeal (MP) joint
- PTSD, see Posttraumatic stress disorder (PTSD)
- Pulp and dorsal surfaces of finger and thumb, flaps for 538–539
- Pulp and glabrous surface reconstruction **534**
- Pulp compartments 534
- Pulp loss of fingers 519
- Pulp loss of previously replanted index
- finger with cross-finger flap - analysis of the deficit **515**
- formulation of a treatment plan 516
- history and examination 515
- outcome 516
- preferred options 516
- Pulp loss of previously replanted index finger with cross-finger flap **515** Pulp surface **43**, **44**
- Pulp surface of finger and thumb, flaps and grafts for 536–537
- Pulp vascularity 534

Purpura fulminans 436

Q

- Quad toe transfer of four toes to one hand
- analysis of the deficit 410
- formulation of a treatment plan
 410
- history and examination 410
- outcome 413
- preferred option 410
- Quad toe transfer of four toes to one hand **410**, *411*

R

- Radial collateral ligament
- reconstruction 106
- Radial forearm fascial flap + STSG to the thumb
- analysis of deficit 555
- formulation of treatment 556
- history and examination 555
- outcome 556
- preferred option 556
- Radial forearm fascial flap + STSG to the thumb 555

Radial forearm flap to long finger 558 Range of motion (ROM) exercises 137 Ray amputation 488

- Ray and cascade, concept of
- defects of thumb and finger,
- classification of
- -- digital defect index (DDI) 34
- -- oblique longitudinal defects 34
- -- transverse defects 32

- defects of thumb and finger, classification of 32
- endpoint and perspectives 31
- evaluation phase 29
- execution phase $\ 30$
- formulation phase 29

-- digital extension 19

-- intrinsic muscles 14

-- lymphatic system 28

-- nervous system 24

-- vascular system 25

-- venous system 27

4

Ray resection

491

index neglect

-- outcome 491

-- preferred option 491

index neglect 489

Ray transposition 473

closure 487

- outcome 48

47

218

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

-- skeletal system 5

-- musculotendinous system 13

- hand, anatomical characteristics of

- at proximal metacarpal level due to

-- formulation of a treatment plan

-- history and examination 489

- at proximal metacarpal level due to

- indications and functional loss 488

Ray resection 472, 485, 488, 489, 644

Ray transposition versus primary

Reattachment as a composite graft

- treatment plan, formulation of 48

Reattachment of all digits and thumb

- formulation of treatment plan 218

Reattachment of all digits and thumb

Reattachment of amputated part 51

Reattachment of the amputated part as

- formulation of a treatment plan 572

Reattachment of the amputated part as

- and groin pedicle flap coverage 104

- history and examination 218

Reattachment as a composite graft 46,

Raynaud's phenomenon 360

analysis of the deficit 47

- preferred option 48

- analysis of deficit 218

- preferred option 218

a composite graft

- preferred option 572

Reattachment of thumb

- analysis of the deficit 572

- history and examination 572

- reconstructive options 572

a composite graft 572, 573

- history and examination 101

- reconstructive options 101

- analysis of the deficit 101

- outcome 218

- history and examination 46

- technical considerations 31

Ray and cascade, concept of 1

-- analysis of the deficit 491

-- integument 28

functional and aesthetic subunits of hand 38

Reattachment of thumb 101 102 154

Reattachment versus primary closure

- options for, degloving and avulsion

injuries of fingers and thumb 634

- through strategic redistribution 30

transposition, bilateral; Immediate

Immediate versus delayed thumb

degloving and avulsion injuries of

- degloving and mutilation injuries of

longitudinal and oblique loss of the

fingers and thumb involving the

involving the fingers and thumb

- transverse zone III of finger 335

- transverse zone III of thumb 68

- transverse zone IV of thumb 99

- transverse zone IX of thumb 249

- transverse zone V of finger 389

- transverse zone VI of finger 430,

- transverse zone VII of thumb 192

- transverse zone VIII of thumb 217

- transverse zones I and II of finger

degloving and avulsion injuries of fingers and thumb **634**

degloving and mutilation injuries of

- longitudinal and oblique loss of the

fingers and thumb involving the

involving the fingers and thumb

transverse zone III of finger 335transverse zone III of thumb 70

transverse zone IV of finger 362

- transverse zone IV of thumb 100

transverse zone IX of thumb 249transverse zone V of finger 389

- transverse zone VI of finger 430

- transverse zone VII of thumb 192

- transverse zone VIII of thumb 217

transverse zone VI defect of thumb

longitudinal palmar defects

- zone V defect of thumb 130

Reconstruction, principles of

hand and wrist 658

lateral surface 571

transverse zone X of thumb (wrist

transverse zone VI defect of thumb

transverse zone IV of finger 362

Recipient left thumb 131

through 30

Reconstruction

Reconfiguration, reconstruction

- through reconfiguration 30

- through transplantation 30

Reconstruction, see Cleft hand

reconstruction with index

trimmed toe reconstruction:

reconstruction: Nail complex

reconstruction; Osteoplastic

- through reduction 30

- through simile 30

reconstruction

Reconstruction objectives

hand and wrist 657

lateral surface 571

495

152

458

305

495

152

level) 285

- longitudinal palmar defects

fingers and thumb 634

461

77

- getting to know the patient 29
- hand anatomy, essence of 1
- hand, anatomical characteristics of
 arterial system 25

- transverse zone X of thumb (wrist level) 285
- transverse zones I and II of finger 305
- transverse zones I and II of thumb 45

zone V defect of thumb 130
 Reconstruction, principles of 45
 Reconstruction, principles of

Reconstruction, principles of, transverse zone VI of finger **458** Reconstructive options

- degloving and mutilation injuries of hand and wrist 658
- longitudinal and oblique loss of the fingers and thumb involving the lateral surface 571
- longitudinal palmar defects involving the fingers and thumb 495
- thumb zone I 45
- thumb zone II 46
- transverse zone III of finger $\ 336$
- transverse zone III of thumb $\ 70$
- transverse zone IV of finger 362
- transverse zone IV of thumb 100
- transverse zone IX of thumb 249
- transverse zone V of finger 390
 transverse zone VI defect of thumb 152
- transverse zone VI of finger 458
- transverse zone VII of thumb 192
- transverse zone VIII of thumb 217
- transverse zone X of thumb (wrist level) 285
- transverse zones I and II of finger 305
- transverse zones I and II of thumb 45

 zone V defect of thumb 130
 Reconstructive options 45
 Red streaking 103
 Reduction, reconstruction through 30
 Reflex sympathetic dystrophy (RSD) syndrome 54, 135
 Regional flaps 306
 Rehabilitation phase, of treatment program 31
 Retaining ligament 599

Retinacular structures 7, 596 Retinaculum tendini longi 599 Retrograde (reversed) homodigital

- island flap - analysis of the deficit **328**
- history and examination 328
- outcome 330
- preferred option 328
- reverse island transfer, technique of 330
- Retrograde (reversed) homodigital island flap **328**
- Revascularization 634 Ring avulsion Class IIa
- analysis of the deficit 635
- formulation of a treatment plan 635
- history and examination 635
- outcome 635
- preferred option 635
- Ring avulsion Class IIa 635, 636
- Ring avulsion in older patient analysis of the deficit **647**
- formulation of a treatment plan 648
- history and examination 647

- outcome 648
- preferred option 648
- Ring avulsion in older patient 647 Ring avulsion injuries (Classes I and II) with intact skeleton
- class IVd ring avulsion 641, 641
- class IVd ring avulsion/amputation
 639
- secondary reconstruction using second toe transfer, class IVc 642
- Ring avulsion injuries (Classes I and II) with intact skeleton **638**
- Ring avulsion Type IIav
- analysis of the deficit 636
- formulation of a treatment plan 637history and examination 636
- nistory and examinat
- preferred option 636
- Ring avulsion Type Ilav **636**, 637 Ring degloving 632 Ring digital transposition to thumb 139
- Ring finger
- and thumb avulsion injuries with degloving 654
- elective thenar flap to 322
- second toe transfers to 392
- thenar flap for palmar oblique loss
- of 324, **324** Ring finger, *see* Index finger; Long
- finger Ring-to-thumb transposition
- analysis of the deficit 94
- history and examination 94
- outcome 94
- preferred option 94
- reconstructive options 94
- treatment plan **94**
- Ring-to-thumb transposition **94** ROM exercises, *see* Range of motion
- (ROM) exercises RSD syndrome, *see* Reflex sympathetic
- dystrophy (RSD) syndrome

S

- Salvage following mutilating injuries 294 SCIA system, *see* Superficial circumflex
- iliac artery (SCIA) system Second toe harvest **227**
- Second toe morbidity 402
- Second toe revision 348
- Second toe to index finger as primary reconstruction - analysis of the deficit **346**
- history and examination 346
- outcome **346**
- preferred option 346
- treatment plan, formulation of **346** Second toe to index finger as primary
- reconstruction **346**, 347 Second toe to thumb and second toe to long finger
- analysis of deficit 111
- formulation of treatment plan 111
- history and examination 111
- outcomes 113
- preferred option 111
 Second toe to thumb and second toe to long finger 111, 157
- Second toe to thumb transfer for thumb aplasia

- analysis of deficit 260
- formulation of treatment plan 260

Index

Secondary reconstruction following

Secondary reconstruction of distal

dorsal resurfacing 671

Septuagenarian, reattach as a

- analysis of the deficit 309

Septuagenarian, reattach as a

- analysis of the deficit 467

- history and examination 467

composite graft in 309, 309

- history and examination 309

- treatment plan, formulation of 309

Severely crushed hands with no fingers

- formulation of a treatment plan 470

Severely crushed hands with no fingers

SIEA, see Superficial inferior epigastric

SIEF, see Superficial inferior epigastric

Simile, reconstruction through 30

Simple incomplete and complete

Simple incomplete syndactyly,

Single-fingered hand 259

preferred incisions for 622

Simple complete syndactyly, preferred

syndactyly releases, correction of

Skeletal debridement and primary skin

- formulation of a treatment plan 103

Skeletal lengthening 363, 430, 458

Skeletal reattachment + groin flap

- analysis of the deficit 103

- history and examination 103

Skeletal reattachment + groin flap

Skin envelope reattachment as a

- formulation of a treatment plan

- history and examination 645

Skin envelope reattachment as a

-- analysis of the deficit 161

- elective trimmed great toe transfer

-- formulation of a treatment plan

-- history and examination 161

elective trimmed great toe transfer

723

- analysis of the deficit 645

composite graft in

thumb 63

outcome 309preferred option 309

or thumbs

- outcome **470**

- preferred option 470

Severely hypoplastic thumb,

reconstruction of 263

Silicone prosthesis 170

incisions for 629

Simon Kay's technique 452

or thumbs 467

artery (SIEA)

flap (SIEF)

620

Sirolimus 247

coverage

- outcome 103

coverage 103

composite graft

645

161

-- outcome 161

161.162

-- preferred option 161

- outcome 645

- preferred option 645

composite graft 645

Skin graft placement

preferred option 103

Skeletal system of hand 5

closure 100

- history and examination 260
- outcome 262
- preferred option 260
 Second toe to thumb transfer for
- thumb aplasia 260
- Second toe transfer
- custom-made distal great toe and 201, 202
- distraction of ulnar post
- -- analysis of the deficit 185
- -- formulation of a treatment plan 185
- -- history and examination 185-- outcome 187
- -- preferred option 185

-- outcome 367

- to index finger

-- outcome 366

-- outcome 242

366

distraction of ulnar post 185
failed replant followed by

-- formulation of treatment plan 366

failed replant followed by 366, 367

- failed replant, groin flap and 211

- pedicle flap transfer and 203

-- analysis of the deficit 365

-- formulation of a treatment plan

-- history and examination 365

- preferred option 366

- to index finger 365, 365

-- analysis of the deficit 242

-- history and examination 242

-- thumbs in aplastic hands 242

to thumb metacarpal 242

See also Bilateral second toe

transfer; Elective second toe

toe transfer; Isolated distal toe

Toe transfer; Trimmed great toe

Second toe, importance of DIP fusion

- digital transposition, multiple toe

transfers to both hands in CRS

- great toe transfer with dorsalis pedis

- ipsilateral quad toe transfer of four

transposition, second toe transfer for

multiple toe transfers transfers for

toes to one hand 410, 411

multiple local releases index

child with constriction ring

syndrome (CRS) 405, 406

Secondary pulp reduction of

transferred toe 404

transfer; Triple toe transfer

Secondary pulp reduction of

of 158

transferred toe

patient 408, 409

pedicle 159, 160

CRS 413

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

-- treatment plan, formulation of 242

Second toe transfer 111, 113, 116, 117

transfer; Custom partial great toe

transfer; Failing toe transfer; Great

transfers; Microvascular toe transfer;

thumb gigantism treated with great

- to thumb metacarpal

-- preferred option 242

toe transfer 244

-- history and examination 366

-- analysis of deficit 366

-- preferred option 366

- trimmed great toe transfer
- -- analysis of the deficit 163
- -- formulation of a treatment plan 163
- -- history and examination 163
- -- outcome 163
- preferred option 163
- trimmed great toe transfer **163**, *164* Skin graft placement **161**
- Skin grafting followed by
- phalangealization and first web deepeninganalysis of the deficit 687
- formulation of a treatment plan 687
- history and examination **685**
- outcome 687
- preferred option 687
 Skin grafting followed by phalangealization and first web
- deepening **685**, 686 Skin grafts
- for fingertip injuries
- completely amputated fingertip, revascularization of 313, 314
 nonviable fingertip
- revascularization in a toddler **312**, 313
- for fingertip injuries 311
 Skin grafts 137
 Small to medium-sized defects 585
 Smoking 156
- Soft-tissue coverage **430**, 458 Soft-tissue envelope 28
- Spare parts
- and lateral oblique injuries 575reconstruction
- -- analysis of the deficit 84
- -- formulation of a treatment plan **86**
- -- history and examination 84
- -- outcome 86
- preferred option 86
 reconstruction 84, 86
 Spare parts 241, 574–575
 Spare parts salvage in the circus arena 679
 "Special thumb" category 421, 423
- Specialized glabrous skin 524 Split-thickness skin graft (STSG) 46, 305, 310, 321, 543, 634
- Spontaneous healing 310 STA, see Superficial temporal artery
- (STA)
- Strategic planning 294
- Strategic prioritization 284 Strategic redistribution, reconstruction
- through 30
- STSG, *see* Split-thickness skin graft (STSG)
- Stump revision 363
- STV, *see* Superficial temporal vein (STV) Superficial circumflex iliac artery
- (SCIA) system 105, 133, 207, 465
- Superficial inferior epigastric artery (SIEA) 105
- Superficial inferior epigastric flap (SIEF) 661
- Superficial palmar arch 25

724

- Superficial temporal artery (STA) 565, 566 Superficial temporal vein (STV) 565,
- 566
- Symbrachydactyly 166, 183, 184, 186, 188, 190, 419, **421**

- Symbrachydactyly treated with customized double second toe transfer
- analysis of the deficit 187
- formulation of a treatment plan 187
- history and examination 187
- outcome 187
- preferred option 187
 Symbrachydactyly treated with customized double second toe
- transfer **187** Symbrachydactyly treated with
- nonvascularized phalangeal transfers – analysis of the deficit **451**
- formulation of a treatment plan 451
- history and examination **449**
- outcome 451
- preferred option 451
- Symbrachydactyly treated with nonvascularized phalangeal transfers **449**. *450*
- Symbrachydactyly, transposition, lengthening
- analysis of the deficit 418
- formulation of a treatment plan 418
- history and examination 418
- outcome 418
- preferred option **418**
- Symbrachydactyly, transposition, lengthening **418** Syndactyly release, preferred incisions
- and techniques for **622** Synergism, facilitation through 30

Т

- Temporoparietal fascia (TPF) 497, 566 Temporoparietal fascial flap (TPF) + split-thickness skin graft (STSG) to hand 564 Temporoparietal fascial flap (TPF) fascial flap dissection 565, 567 Tendon repair 31 Tensor fascia lata (TFL) flap 210 Terminal bifurcation of ulnar artery 25 Terminal phalanx 68 Terminal portion of the thumb and fingers 41 Terminal portion of thumb 64 TFL flap, see Tensor fascia lata (TFL) flap Thenar augmentation 279 Thenar flap - for palmar oblique loss of the ring finger -- analysis of deficit 324 -- history and examination 324 -- outcome 325 -- preferred option 325 -- treatment plan, formulation of 325 - for palmar oblique loss of the ring finger 324, 324 - for palmar pulp loss of the finger -- extensive pulp loss of multiple fingers 518
- painful scar and RSD treated with cross-finger fascial flap + STSG 517
- -- pulp loss of previously replanted index finger with cross-finger flap
- **515** for palmar pulp loss of the finger
- **514** Thenar flap **326**

Third dorsal metacarpal artery flap to a finger

Thumb salvage failures 137

Thumb-index webspace 596

Thumb-index web space release

Toe composite transfers and donor

Toe MP joint, hyperextension of 111

Toe placement and appearance 399

- dorsal nail reconstruction with 550

for children with the constriction

digital level, distraction at 383, 383

See also Bilateral second toe transfer;

Custom partial great toe transfer;

toe transfer; Great toe transfer;

Isolated distal toe transfers;

transfer; Triple toe transfer

Toe/free tissue transfer, vascular

Toe, distal interphalangeal of 113

Elective second toe transfer; Failing

Microvascular toe transfer; Second

compromise during and following

Toes and thumb, anatomical differences

Toes and thumb, comparison between

Total hand myoelectric prosthesis 298

metacarpals and proximal phalanges

- formulation of a treatment plan 668

Total loss of all dorsal structures of

Toes selection for transfer 399

- analysis of the deficit 666

- history and examination 666

Total loss of all dorsal structures of

Total palmar and dorsal degloving plus

Total palmar and dorsal degloving plus

Total range of motion (TROM) 465

Transplantation of thumb 177

Transplantation, reconstruction

1st stage: debridement with

thumb position 241

discretion 583

TPF, see Temporoparietal fascia (TPF)

Transposition of spare parts into the

Transposition to lateral defect of thumb

metacarpals and proximal

- analysis of the deficit 664

- history and examination 664

toe transfer; Trimmed great toe

- foot morbidity following 401

-- digital lengthening prior to

- unusual indications for 382

prosthetic wear 384, 385

following trauma 137

Toe pedicle dissection 125

Toe to hand transfer 362

ring syndrome 416

- unusual indications for

Toe transfer 131

225

121

between 120

- outcome 668

amputations

- outcome 666

Trametinib 247

through 30

- preferred option 668

phalanges 666, 667

- preferred option 664

- treatment plan 666

amputations 664

Thumbindex (first) web space anatomy

and functional considerations 608.

Thumb tip injury 45

612

sites 477

Toe transfer

- analysis of deficit 559
- formulation of treatment plan 559history and examination 559
- outcome 559
- reconstructive options 559
- Third dorsal metacarpal artery flap to a finger **559**, *560*
- Thrombolytic agents 226
- Thumb amputations 50, 57, 62, 64, 170, 176
- Thumb and digital flexion 22
- Thumb and digital loss treated with transposition and metacarpal distraction
- analysis of the deficit 434
- formulation of a treatment plan 436
- history and examination 434
- outcome 436
- preferred option 434
- Thumb and digital loss treated with transposition and metacarpal
- distraction 434
- Thumb degloving 651, 653 Thumb flexion 24
- Thumb gigantism treated with great toe transfer
- analysis of deficit 244
- history and examination 244
- outcome **244**
- preferred option 244
- ultimate treatment plan 244
- Thumb gigantism treated with great toe transfer **244**
- Thumb hypoplasia treated with formal pollicization, type V
- analysis of deficit 270
- formulation of treatment plan (index pollicization) 270

Thumb hypoplasia treated with formal

Thumb hypoplasia treated with second

- formulation of treatment plan 268

Thumb hypoplasia treated with second

Thumb length and relative importance

- groin pedicle flap and trimmed great

- osteoplastic reconstruction 171

Thumb length and relative importance

heterodigital neurovascular island

toe transfer, type IIIB 268, 269

- history and examination 268

pollicization, type V 270, 271

- history and examination 270
 outcome 273
- preferred option 270

toe transfer, type IIIB

- analysis of deficit 268

- preferred option 268

- outcome 268

of MP mobility

of MP mobility 170

flap 503, 504, 507

Thumb reattachment

- outcome 153

153

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

Thumb pulp loss and classic

- analysis of the deficit 153

preferred option 153

Thumb reattachment 153

- history and examination 153

sequence for thumb reattachment

treatment plan, formulation of 153

toe 172

- Index
- symbrachydactyly 421symbrachydactyly, transposition,
- lengthening **418** – thumb polydactyly to finger
- transposition 421
- timing **416**

- reconstructive objectives 99

- reconstructive options 100

technique and nuances of

toes and thumb, anatomical

- trimmed great toe transfer in a

differences between 120

triple-toe transfer 117

Transverse zone IX of thumb

- foot to hand transfer 256

- limited rotation-recession

- functional deficit 249

osteotomy 267

- one-digit hand 259

- polliciization for congenital

differences 274, 275

level IX 262

of 280

248

- anatomy 416

foot in 417

box at 423

transfer 401

finger in 397

- revisions 417

considerations 389

parental questions 417

to long finger 111

coverage 103

child 124.127

anatomy 249

- deformity 249

273

250

265, 266

114

- second toe to thumb and second toe

- skeletal reattachment + groin flap

"trimmed"/"modified" toe transfer

- vascular pedicle, preparation of 124

Transverse zone IV of thumb 99, 100

- Fanconi anemia and early diagnosis

fifth finger transposition to thumb

index rotation-recession osteotomy

microvascular transfers at thumb

- monodactyly associated with cleft

hand/cleft foot syndrome 253

pollicization, long-term outcomes

- reconstruction, principles of 249

- reconstructive objectives 249

reconstructive options 249

severely hypoplastic thumb,

Transverse zone IX of thumb 248,

constriction ring syndrome (CRS),

- deformity/functional deficit 389

- distraction lengthening 417

- foot morbidity following toe

- normal anatomy and anatomical

- reconstruction, principles of 389

second toe transfers to index and

second toe transfers to index and

secondary pulp reduction of

- selection of toes for transfer 399

reconstructive objectives 389

reconstructive options 390

long fingers 390, 391

ring fingers 392

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

transferred toe 404

phalangeal hand, reconstruction of a

digital level V, thinking out of the

thumb aplasia 260

reconstruction of 263

Transverse zone V of finger

second toe to thumb transfer for

- toe placement and appearance 399
- toe transfers for children with
- constriction ring syndrome **416** - triple toe transfer to hand **393**, 394
- two single toe transfers + index ray resection **395**, 396
- unusual indications and special thumbs 423
- vascularized joint transfers 426
- vascularized toe PIP joint transfer 424
- Transverse zone V of finger 388, 388 Transverse zone VI defect of thumb
- anatomy 151
- complete loss of phalangeal thumb 158
- congenital differences and thumb loss critical thumb zone VI 189
 deformity/functional deficit 152
- deformity/functional deficit 132
 distraction metacarpal lengthening 181, 182
- elective second toe transfer 156
- great toe transfer with dorsalis pedis pedicle 159, 160
- great toe transfer, modification of 165
- groin pedicle flap and trimmed great toe 172
- history of thumb reconstruction 175, 175
- immediate second toe transfer and index ray resection 154
- nonvascularized toe phalanx 183
- osteoplastic principles 174
- osteoplastic reconstruction 171
- reconstruction, principles of 152reconstructive objectives 152
- reconstructive objectives 15
 reconstructive options 152
- second toe transfer, distraction of ulnar post 185
- second toe, importance of DIP fusion of 158
- skin graft placement 161
- symbrachydactyly treated with customized double second toe transfer 187
- thumb reattachment 153
- Transverse zone VI defect of thumb 151, 151
- Transverse zone VI of finger
- accept defeat and ablate the useless finger **491**
- anatomy **427, 457**
- bilateral forefoot to hand transfers following frostbite amputations 479, 480
- bilateral forefoot to hands 483
- bilateral metacarpal hands 448burned hands, bilateral type IIB
- metacarpal hands 437, 438
- cleft hand reconstruction with index transposition, bilateral **452**
- combined toe composite transfers and donor sites **477**
- deformity 427
- deformity/functional deficit 427, 458

725

- 2nd stage: revascularization 583
- 3rd stage: digital transposition to thumb **583**
- 4th stage: web space construction 583
- 5th stage: flexor pollicis longus tendon restoration 583
- partial great toe pulp transfer
 583
- Transposition to lateral defect of thumb 583
- Transverse defects of thumb and finger
- finger
- anatomical planes of transition
 32
- -- critical zones 33
- thumb
- -- anatomical planes of transition 32
- -- critical zones **32** Transverse defects of thumb and
- finger **32** Transverse retinacular ligament (TRL)
- 570, **599** Transverse zone III of finger
- anatomy 334
- anatomy 554
 custom-made fabrication 353
- deformity/functional deficit 335
- gangrene, vascular insufficiency, V to Y, and amputations 358, 359
- isolated distal toe transfers 348
- microsurgical salvage in zones III and IV 342
- nail matrix reconstruction 352, 353phalangeal level, prosthetic wear at
- **360** preservation of length **357**
- primary reattachment of amputated parts and delayed thenar and hypothenar flaps 340, 341
- reattachment and revascularizaton of amputated part 337
- reattachment of avulsion amputation 339
- reconstruction, principles of 335
- reconstructive objectives 335
- reconstructive options 336
- vascular insufficiency and distal gangrene 358
- Transverse zone III of finger 334, **334** Transverse zone III of thumb
- anatomy 66
- case studies 72
- deformity/functional deficit **68**
- distal thumb revascularization 75, 76
- elective trimmed/modified great toe transfer 91
- heterodigital ring-to-thumb transposition 94, 95
- immediate modified/trimmed great toe transfer 89
- immediate versus delayed thumb reconstruction 93
- immediate "custom-made" great toe to thumb 87
- local advancement flap closure + FTSG in emergency setting 80
- local bipedicle advancement closure
 + FTSG as an elective reconstruction
 82
- local bipedicle island flap advancement + FTSG 82

- microvascular reattachment 74, 74
- modified wraparound and trimmed great toe reconstruction, technique of 91
- osteoplastic reconstruction of thumb **95**, 96
- osteoplastic reconstructions in zone
- III of thumb **97** – primary amputation closure and
- secondary distraction lengthening **72**
- primary closure 72
- prosthesis **97**, 98
- prosthesis and appearance 98reattachment versus primary
- closure 77
- reconstruction, principles of 70reconstructive objectives 68

- spare parts reconstruction of the

Transverse zone III of thumb 66, 66

- deformity/functional deficit 362

- distraction lengthening at digital

second toe transfer 366, 367

- immediate second toe transfer to

- multiple toe transfers to three digital

normal digital cascade and other

- pedicled second toe to fifth digit

- reconstruction, principles of 362

- toe transfer, unusual indications for

Transverse zone IV of finger 361, 361

- bilateral thumb reconstruction 113,

- reconstructive objectives 362

- reconstructive options 362

Transverse zone IV of thumb

- congenital differences 126

- deformity/functional deficit 99

- failed replantation and secondary

oteoplastic reconstruction 107

- groin flap transfer to the hand 105,

- immediate trimmed or modified toe

- microvascular reattachment of

- reattachment of thumb 101, 102,

- reconstruction, principles of 100

amputated part 101

- failed replants and osteoplastic

- great toe transfers 122, 453

reconstruction 108

potential complications and patient

- immediate reattachment of

amputated digits 363

index finger 365, 365

reconstruction 370

amputations 368

factors 374

transfer 380

382

- anatomy 99

114.116

105

104

transfer 109

- outcome 125

expectations 380

- immediate versus delayed

- failed replant followed by immediate

reconstructive options 70
spare parts reconstruction 86

- vein grafts, use of 78

- venous congestion 78

Transverse zone IV of finger

thumb 84

- anatomy 362

level IV 385

- digital transposition in zone VI in the typical cleft hand 456
- ectopic tissue banking and subsequent replantation 464
 foot donor site with multiple toe
- transfers 449
- functional deficit 428
- hemi-hand amputation and ectopic implantation into the forearm 462
- index finger amputation 483
- metacarpal hand **428**, 429
- metacarpal hand, classification of 428
- metacarpal hands following burn injuries 441
- metacarpal resection, osteotomy, for type IIA metacarpal hand 431
- microvascular toe transfer 431
- mid-proximal metacarpal level, reattachment of the hand amputated at 459
- nonvascularized toe phalangeal transfers 451
- osteoplastic reconstruction 430outcome 486
- partial long metacarpal resection
- followed by index transposition **485** – phalangealization **433**
- preferred option 485
- purpura fulminans and the hand
 436
- ray resection indications and functional loss 488
- ray transposition versus primary closure 487
- reconstruction, principles of 430, 458
- reconstructive objectives 430, 458
- reconstructive options 430, 458
- skeletal lengthening 430soft-tissue coverage 430
- symbrachydactyly treated with nonvascularized phalangeal transfers 449, 450
- thumb and digital loss treated with transposition and metacarpal distraction 434
- thumb and hand reattachment 461
- treatment plan, formulation of 485
- treatment strategies in type II
- metacarpal hands **476** - unilateral metacarpal hand **447**
- Transverse zone VI of finger 427, 428, 457, 457
- Transverse zone VI of finger Transverse zone VI of finger, ray resection at proximal metacarpal level due to index neglect **489**
- Transverse zone VII of thumb
- anatomy **191**

726

- custom-made distal great toe + second toe transfer to thumb 201, 202
- deformity/functional deficit 192
- digital transposition to thumb 200
 failed replant, groin flap + second toe transfer 211
- fasciocutaneous flaps 213
- groin flap + modified (trimmed)
 great toe transfer + revision 205
- groin flap with complication followed by ALT flap + modified toe
 - transfer **207**

- index finger damage to thumb transposition 196, 197
- index finger transposition to the thumb 192
- long finger damage to thumb transposition 78, 198
- pedicle flap transfer + second toe transfer 203
- reconstruction objectives 192
- reconstruction, principles of 192
 reconstructive options 192
- strategic planning, details, and
- execution 210
- vascularized toe transfer versus finger transposition 201
 Transverse zone VII of thumb 191, 191
- Transverse zone VII of thumb
- anatomy 216CLOVES syndrome 245, 246
- deformity 217
- foot morbidity following great toe transfer 227
- functional deficit 217
- pik3CA genetic abnormality 246reattachment of all digits and
 - thumb 218
- reconstruction, principles of **217**
- reconstructive objectives 217
- reconstructive options 217
 second toe transfer to thumb
- metacarpal 242
- thumb and hand reattachment at the mid-palmar level 220
- vascular anomalies 246, 247
- vascular compromise during and following toe or free tissue transfer 225
- Transverse zone VIII of thumb 216, 216
- Transverse zone X of thumb (wrist level)
- amputated hand reattachment at wrist level 286, 287
- anatomy 284
- cosmetic hand prosthesis for amputated hand 298
- deformity/functional deficit 285
- entire hand reattachment at the wrist level 288
- hand allotransplantation 295, 295, 297
- reconstruction, principles of 285
- reconstructive objectives 285
- reconstructive options 285salvage following mutilating
- injuries **294** Transverse zone X of thumb (wrist
- level) 284, 284 Transverse zones I and II of finger
- anatomy 300
- composite graft, untidy case 307
 cross-finger flaps 321, 321
- deformity/functional deficit 305
- failed initial revascularization and reversed homodigital island flap
- 330, 331
 fingertips reattached as composite grafts 310
- homodigital island flaps 332
- hyponychium 301, 302
- microvascular salvage in critical digital zones II and III 314, 315
- multiple cross-finger flaps 319, 320

- nail complex 303
- reattach as composite graft in a neonate, tidy case 306, 307
- reconstruction, principles of 305

- history and examination 163

Trimmed great toe transfer 89, 163,

See also Bilateral second toe transfer;

Custom partial great toe transfer:

toe transfer; Great toe transfer;

Isolated distal toe transfers;

Elective second toe transfer; Failing

Microvascular toe transfer: Second

toe transfer; Toe transfer; Triple toe

Trimmed toe transfer in a child 124,

"Trimmed"/"modified" toe transfer,

Triple digital avulsion/amputations,

- formulation of a treatment plan 683

Trimmed toe transfer, technical

analysis of the deficit 681

- history and examination 681

Triple digital avulsion/amputations,

- formulation of a treatment plan 119

preferred option 681

thumb and 681, 682

analysis of the deficit 119

- history and examination 117

- in a type IID metacarpal hand

-- analysis of the deficit 473

-- formulation of a treatment plan

-- history and examination 473

- in a type IID metacarpal hand 473

nuances for 115

thumb and

- outcome 683

Triple toe transfer

475

-- outcome 475

- outcome 119

- to hand

393

454

-- outcome 393

- to hand 393, 394

-- preferred option 393

-- preferred option 473

- preferred option 119

-- analysis of the deficit 393

-- formulation of a treatment plan

-- history and examination 393

Triple toe transfer 117, 118, 122, 453-

Custom partial great toe transfer;

toe transfer: Great toe transfer:

Isolated distal toe transfers;

TRL, see Transverse retinacular

TROM, see Total range of motion

great toe transfer

ligament (TRL)

(TROM)

resection

- outcome 395

- preferred option 395

395

Elective second toe transfer; Failing

Microvascular toe transfer; Second

toe transfer; Toe transfer; Trimmed

Tube pedicle chest flap + bone graft 61

Two single toe transfers + index ray

formulation of a treatment plan

- history and examination 395

- analysis of the deficit 395

See also Bilateral second toe transfer;

technique and nuances of 110, 114

preferred option 163

- outcome 163

164

transfer

127

- reconstructive objectives **305**
- reconstructive options 305
- retrograde (reversed) homodigital island flap 328
- septuagenarian, reattach as a composite graft in 309, 309
- skin grafts for fingertip injuries 311
- terminology **300**
- thenar flaps 326

- anatomy 43

54

48

- V-to-Y flap indications 318Transverse zones I and II of finger 300
- Transverse zones I and II of thumb

-- critical thumb zone II 43, 43

- debridement and local flap revision

- chest flap + bone graft 60

- deformity/functional deficit

- distant and regional flaps for

secondary reconstruction of the

- fingertip losses, terminology of,

reconstructive objectives 45

- fingertip losses, terminology of 45

- full-thickness hypothenar skin graft

- heterodigital neurovascular island

- Lister's treatment algorithm 59

painful thumb, palmar V-to-Y

- reattachment as a composite graft

- reconstruction, principles of 45

- V-to-Y advancement flaps 57, 58

Transverse zones I and II of thumb 42

Traumatic avulsion of the entire thumb

- formulation of a treatment plan 499

Traumatic avulsion of the entire thumb

pulp with poor outcome 499, 500

- formulation of a treatment plan 497

- microvascular reattachment in distal

- cross-finger flap 51, 52

-- thumb zone I 44

-- thumb zone II 44

distal thumb 63

transfer 60, 62

thumb and finger 64

advancement 55.56

- reconstructive options

- reconstructive options 45

pulp with poor outcome

- analysis of the deficit 499

- outcome 499

- outcome **497**

Trifurcation 27

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- preferred option 499

Traumatic distal pulp loss

- preferred option 497

Trimmed great toe transfer

- analysis of the deficit 163

- analysis of the deficit 497

- history and examination 497

Traumatic distal pulp loss 497, 498

Traumatic thumb or finger loss 461

- formulation of a treatment plan 163

- history and examination 499

-- thumb zone I 45

-- thumb zone II 46

- painful thumb 55

46.47

- anatomy -- critical thumb zone I 42, 43 Two single toe transfers + index ray resection **395**, 396 Two-fingered hand **157**

U

- UCL, see Ulnar collateral ligament (UCL) Ulnar artery, terminal bifurcation of 25
- Ulnar collateral ligament (UCL) 103 Ulnar digital artery to thumb 44 Ultra-microsurgery 64
- Ultra-thin fasciocutaneous flap 670
- Ultrathin flap 215 Unilateral double toe, trimmed great
- toe transfer to the hand - analysis of the deficit **443**
- analysis of the dencit 445
 formulation of a treatment plan 445
- history and examination 443
- outcome 445
- preferred option 445
- Unilateral double toe, trimmed great toe transfer to the hand **443**, 444
- Unilateral metacarpal hand
- type IA, multiple toe transfers
- -- analysis of the deficit 442-- formulation of a treatment plan
- 443
- -- history and examination 442-- outcome 443
- -- preferred option 443
- type IA, multiple toe transfers 442
- type IIB, following traumatic
- amputation at the mid-palmar level --- analysis of deficit **465**
- -- formulation of a treatment plan **467**
- -- history and examination 465 -- outcome 467
- -- preferred option 467
- type IIB, following traumatic amputation at the mid-palmar level 465
- Unilateral metacarpal hand 447
- See also Amputated hand, cosmetic hand prosthesis for; Metacarpal hand
- Unsatisfactory free medial instep-free flap followed by heterodigital neurovascular island flap

- analysis of the deficit 503
- formulation of a treatment plan 503
- history and examination 501outcome 503
- preferred option 503
- Unsatisfactory free medial instep-free flap followed by heterodigital
- neurovascular island flap 501, 502 Unsuccessful thumb replantation followed by failed great toe transfer
- 684, 685 Useless finger **491** Useless index digit 491 Useless index ray 492

V

- V-to-Y advancement flap of a finger 315, 316 V-to-Y advancement flaps of a finger
- analysis of the deficit 316
- history and examination 315outcome 317
- preferred option 317
- treatment plan, formulation of **317**
- V-to-Y advancement flaps of a finger 57.58
- V-to-Y advancements 57
- V-to-Y flap indications **318**
- V-to-Y flaps, primary closure with
- analysis of deficit 354
- history and examination 354
- outcome 354preferred option 354
- preferred option 334
 treatment plan, formulation of 354
- V-to-Y flaps, primary closure with 354 355
- V-to-Y Moberg flap 82
- VAC dressing, see Vacuum-assisted
- closure (VAC) dressing
- VACTERL association 268
- Vacuum-assisted closure (VAC) dressing 109, 495, 541, 586, 590,
- 607 Variable transverse arches of the hand

11 Vasconez's law 274 Vascular anastomosis 31

Vascular anomalies 246, 247

- Vascular compromise during and following toe or free tissue transfer 225
- Vascular insufficiency and distal
- gangrene **358** Vascular island transfers 590
- Vascular pedicle, preparation of 124
- Vascular system 25 Vascularized bone graft, resorption of
- 148 Vascularized composite
- allotransplantation (VCA) 298
- Vascularized joint transfers **426** Vascularized reattachment, neonatal 64
- Vascularized toe PIP joint transfer
- analysis of the deficit 424
- history and examination 424
- options 424
- outcome 424
- treatment plan 424
 Vascularized toe PIP joint transfer 424
 Vascularized toe transfer versus finger transposition 201
 Vasculo-cutaneo-tendino-osseus complex (VCTOC) 535
 VCA, see Vascularized composite
- allotransplantation (VCA) VCTOC, *see* Vasculo-cutaneo-tendinoosseus complex (VCTOC) Vein grafts, use of **78**
- Vein grafts 638
- Venous congestion 78
- Venous flaps 671
- Venous malformations (VM) 590
- Venous malformations (VM) 492, 591 Venous system 26, 27
- Visual search 38
- Visual stimuli of the hand 38
- Vitruvian hand 1, 3
- VM, see Venous malformation (VM),
- venous malformations (VM)

W

from: Chiu et al, Reconstruction of the Thumb and Finger (9781626235748)

© 2025. Thieme. All rights reserved.

- Water ski towrope avulsion, incomplete amputation of hand from
- analysis of the deficit 674execution of a treatment plan 674
- reconstruction, principles of 130
 reconstructive objectives 130
 - reconstructive options 130
 - Zone V defect of thumb 128, 128

727

- history and examination 674
 outcome 674
 - preferred option 674
 - unique palmar surface 675
 - Water ski towrope avulsion, incomplete amputation of hand from **674**
 - Wound closure 31
 - Wrist and forearm incisions 629 Wrist incisions 630
 - Wrist level
 - amputated hand reattachment at 286

Z (Zed)-plasty, teaching the mechanics

- cold and warm ischemia time 135

- deformity/functional deficit 129

osteoplastic reconstruction 133,

- delayed replant and immediate

- finger to thumb transposition

- parasitic thumb following failed

- preferred reconstruction 147

great toe transfer 131

revascularizations 136

- critical levels IV and V, thumb length

 entire hand reattachment at 288

Υ

Ζ

"Y" graft 639

of 616

Z-plasty 57

Z-plasties 310, 441

Zigzag pattern 596

- anatomy 128

134

140

Zone V defect of thumb

Zigzag incision concept 600

and options at 148, 149

"Y"-shaped pattern 44