

# Index

## A

- abdominal injuries
    - blunt trauma
      - 101–102
    - gastrointestinal tract
      - 103
    - hepatic rupture 103
    - pancreatic 103–104
    - sharp trauma
      - 101–102
    - splenic rupture
      - 102–103
    - summary 104
    - urogenital 104
  - abrasion 6
  - abscess 18, 18
  - acceleration injuries
    - 84–85
  - accidents 4–5
  - acetabulum fractures
    - 108–109
  - Achilles tendon rupture
    - 26, 26, 145–146
  - acids, chemical damage
    - by 16–17
  - ACJ *see* acromioclavicular joint
  - ACL *see* anterior cruciate ligament
  - acromioclavicular joint (ACJ), dislocation
    - 157–159
  - active immunization 22
  - acute phase, of multiple trauma 208–209
  - acute respiratory distress syndrome (ARDS) 209
  - AFL *see* anterior fibulotalar ligament
  - Aitken 36
  - alkali, chemical damage
    - by 16–17
  - amnesia 76
  - amputation 58
  - injuries 195, 195–196, 196
  - anabolic metabolism 14
  - anaphylactic shock 208, 210
  - anatomical neck 168
  - Anderson 33, 86
  - angle-stable plate 45, 45–46, 46
  - angular dislocation
    - 32, 32
  - ankle injuries
    - Achilles tendon
      - rupture 26, 26, 145–146
    - calcaneus fracture
      - 148, 148–150, 150
    - ligaments 144–145
    - malleolar fractures
      - 141–144, 142
    - summary 151
    - talus fracture
      - 146–148, 147
  - anteretrograde
    - amnesia 76
  - anterior column 88
  - anterior cruciate ligament (ACL) 124, 125
  - anterior fibulotalar ligament (AFL) 144
  - anterior tibial syndrome 59
  - AO Foundation 33, 182
  - aortic injuries 98–99
  - Apley sign 130
  - ARDS *see* acute respiratory distress syndrome
  - Arlt repositioning 162, 163
  - arthroscopy 126, 130, 162, 166–167
  - articular effusion 65–66
  - atlas fractures (C1) 85
  - atraumatic dislocation
    - 161
  - atrophic nonunion 54, 54
  - avulsion 7
  - axial dislocation 32, 32
  - axial misalignment 35
  - axis injuries (C2) 86–87
  - axonotmesis* 28, 28–29
- ## B
- Bankart lesion 161
  - basilar skull fractures
    - 81–82
  - Baumgartl 134
  - bending fractures 31, 31
  - Bennett dislocation
    - fracture 188, 189
  - biceps tendon rupture
    - 26, 26
  - bimalleolar fracture
    - 142
  - biological
    - osteosynthesis 43
  - biomechanical force
    - transfer 47
  - bite wounds 7
  - blood-brain barrier 77
  - blood poisoning 18
  - blowout fracture 82
  - blunt abdominal trauma 101–102
  - Böhler angle 149, 149
  - Böhler sign 130
  - bone bruise 65
  - bone injury treatment
    - aftercare 39
    - conservative fracture
      - treatment 40–42
    - general guidelines 39
    - immobilization, in
      - cast 40–42
    - repositioning 39
    - retention 39
    - surgical fracture
      - treatment 42–49
  - bone sequester 55
  - brain death 83
  - bridge plates 45, 45
  - bruising 64
  - bone 65
  - moderate TBI 76
  - burns *see also* chemical injuries, by acids or alkali
    - classification of
      - 12–13
    - hospital treatment
      - 14–15
    - local damage 12–13
    - systemic damage
      - 13–14
    - treatment of 14–15
  - burst fracture 89
- ## C
- calcaneus fracture 148, 148–150, 150
  - calf pinch test 145
  - callus distraction 57–58
  - callus formation 34
  - capsular ligament
    - injuries 124–125, 190
  - cardiac compressions
    - 210
  - cardiac injuries 98
  - cardiogenic shock 208, 210
  - cardiopulmonary resuscitation (CPR)
    - 210–212
  - cardiovascular arrest 210
  - cartilage 36
  - injuries 65
  - causality 4
  - cemented
    - osteosynthesis 44
  - central fractures 146
  - centralization 209
  - central nervous system (CNS) 20
  - cerclage wire 46
  - cerebral edema 77–78
  - cervical spine injuries
    - acceleration 84–85
    - atlas (C1) 85
    - axis (C2) 86–87
    - lower (C3–C7) 87

- chemical injuries, by  
acids or alkali  
16–17
- chemical wounds 7
- children  
CPR in 211–212  
fractures of 35–37
- chisel fracture 176
- clavicle fractures  
154–156
- claw hand 29, 29
- clean wounds 9
- closed fractures 32
- closed pneumothorax  
95
- closed TBI 77
- closed wounds 6
- Clostridium perfringens*  
22
- Clostridium tetani* 20
- CNS *see* central nervous  
system
- coagulation necroses 16
- coffin 55
- cold damage  
hypothermia 16  
local freezing 15–16
- collateral fibular  
ligament 124
- Colles fracture 181
- colliquation necroses  
16
- columnar cartilage 36
- comminuted fractures  
31, 32, 176
- compartment syndrome  
24, 27, 58–60
- The Comprehensive  
Classification of the  
Long Bones* (Müller  
and AO Foundation)  
33
- compression dressing  
10–11
- compression fractures  
31, 32
- computed tomography  
(CT)  
abdominal injuries  
102  
fractures 33  
hematomas 78–80  
hemothorax 97  
pelvic fractures 106
- pulmonary artery  
embolism 52
- spinal injury 88
- tibial head fracture  
136
- concussion 76
- connection  
osteosynthesis 43
- conservative treatment  
40–42
- acetabulum 108–109
- ankle ligament 145
- calcaneus 149
- clavicle 155, 155
- cruciate ligament 126
- crus 138
- distal humerus 173
- distal radius 182–183
- elbow 174
- femoral head 113
- femoral neck 115
- hand 185
- humeral shaft  
169–170
- humerus, proximal  
168
- lower arm shaft 179
- malleolar 143
- metacarpal bones  
188–189
- olecranon 175
- radius, proximal 176
- rib 94
- rotator cuff 166
- shoulder 163
- spinal 91
- talus 147
- contused wounds 7
- contusion 64
- moderate TBI 76
- of muscle 24
- convex hematoma 79
- CPR *see* cardiopulmonary  
resuscitation
- cranial vault fractures 81
- cruciate ligament  
ruptures 125–127
- crus fractures 138–140
- CT *see* computed  
tomography
- cuboid bone fracture  
151
- cuneiform bone  
fractures 151
- D**
- d'Alonzo 86
- dancing patella 125
- dashboard injury 108,  
113
- Davies 84
- DCP *see* dynamic  
compression plate
- DCSs *see* dynamic  
condylar screws
- débridement 9, 20, 33
- delayed bone healing  
53–54
- Denis 88
- depression fracture 81,  
81, 176
- DHS *see* dynamic hip  
screw
- diaphragm rupture 99
- direct arterial injury 27
- direct nerve injury 28
- dislocations 32, 32, 64  
ACJ 157–159  
Bennett fracture 188,  
189  
elbow 173–175, 174  
hip joint 111–113  
knee joint 128–129  
Lisfranc joint 151, 152  
patellar 133, 133–134,  
135  
perilunar 187, 187  
SCJ 156–157  
shoulder 160, 161–164
- distal femoral fracture  
121, 121–122, 122
- distal humerus fracture  
172, 172–173, 173
- distal radius fracture  
181, 181–184, 182,  
183
- distorsion 63–64
- Doppler ultrasound 138
- dorsal spondylodesis  
91, 91
- double-threaded screw  
186, 186
- dressings, for wounds  
10–11
- dynamic compression  
plate (DCP) 45
- dynamic condylar  
screws (DCSs) 122
- dynamic hip screw  
(DHS) 48, 49, 118
- dynamic locking 47
- dynamic screw-and-  
plate systems  
48, 49
- dysesthesia 84
- dyspnea 52
- E**
- Effendi 86
- Egypt 4
- elbow injuries  
dislocation 173–175,  
174  
distal humerus  
fracture 172,  
172–173, 173  
olecranon fractures  
175–176  
radius fracture,  
proximal 176, 177  
summary 177
- elephant foot  
nonunion 53
- emarginate 134
- embolism, pulmonary  
artery 52
- empyema 19  
joint 66  
pleural 97
- endogenous osteitis  
54–55
- enterococci 18
- epidural hematoma  
79, 79
- epiphyseal plate  
injuries 37  
classification of  
36–37  
growth disorders  
and 37  
structure and function  
of 35–36  
treatment of 37
- erysipelas 19
- Escherichia coli* 18
- esophagus injuries 98
- Essex-Lopresti 148
- exercise stability 43
- exogenous osteitis 55
- extensor tendon injuries  
193–195

- external chemical injuries 16
- external fixator 47–48, 48
- external rotation test 166, 166
- exudative phase, of wound healing 8
- F**
- facial fractures 82
- false joint *see* nonunion
- fatigue fractures 31
- FCL *see* fibulocalcaneal ligament
- femoral head fractures 113–114  
necrosis 117, 117
- femoral neck fractures 114, 114–117, 115
- femoral shaft fractures 119–120
- fibulocalcaneal ligament (FCL) 144
- figure-of-8 bandage 155, 155
- fingers fractures 189–190  
ligament injuries 190
- first aid cardiopulmonary resuscitation (CPR) 210–212  
shock treatment 209–210
- first-degree burns 14
- first-degree chemical burns 16
- first-degree nerve injury (*neurapraxia*) 28, 28–29
- fissure fracture 89
- fixators external 47–48, 48  
halo 85, 85  
internal 49
- flake fracture 65
- flexor tendon injuries 191–193
- floating shoulder 159, 159, 160
- forefoot injuries 151–153
- fourth-degree burns 14
- fractures *see also* dislocations; *specific fractures*  
of children 35–37  
clinical signs 33  
conservative treatment 40–42  
definition and classification of 31–33  
diagnosis 33  
healing 34  
imaging 33  
with loss of bone substance 31, 32  
primary healing 34, 34  
secondary healing 34, 34  
shaft, of long bones 35  
soft tissue damage in 32–33  
summary 38, 49  
surgical treatment 42–49  
types 31, 31–32
- Friedrich 9
- frontobasilar fractures 81
- frostbite 15–16
- functional positions, of upper extremity 41, 41
- G**
- Galeazzi fracture 179, 179–180
- gangrene 22–23
- Garden 114–115
- gastrointestinal tract injuries 103
- GCS *see* Glasgow Coma Scale
- general traumatology 3  
accident types 4–5  
bone injury treatment 39–49  
chemical injuries 16–17  
complications of fracture healing and treatment 53–62
- fractures 31–38  
history of trauma surgery 4  
introduction 4–5  
joint injuries 63–66  
phlebothrombosis 50–52  
physical injuries 12–17  
pulmonary artery embolism 52  
soft tissue injuries 24–30, 145–146  
surgical infections 18–23  
wound healing and treatment 6–11
- Gilchrist bandage 155, 155
- Girdlestone situation 57, 57
- Glasgow Coma Scale (GCS) 77, 209
- granulation phase, of wound healing 9
- Greeks 4
- greenstick fractures 35, 35
- growth disorders 37
- gunshot wounds 7
- Gustilo 33
- H**
- habitual dislocation 161
- halo fixator 85, 85
- hand injuries amputation 195–196  
finger fractures 189–190  
finger ligaments 190  
metacarpal bone fractures 188–189  
perilunar dislocation 187, 187  
scaphoid fracture 185–186  
summary 197  
tendinous 191–195  
hand of blessing 29, 29  
handworkers 4  
Hawkins 146, 165
- hematomas, intracranial 78  
epidural 79, 79  
intracerebral 79, 80  
subarachnoid 79, 80  
subdural 79, 79–80
- hemothorax injuries 97
- hepatic rupture 103
- Herbert screw 186, 186
- hip injuries distal femoral fractures 121, 121–122, 122  
femoral head fractures 113–114  
femoral neck fractures 114, 114–117, 115  
femoral shaft fractures 119–120  
hip joint dislocation 111–113  
perthrochanteric femoral fractures 118–119  
subthrochanteric femoral fractures 118–119  
summary 123
- hip joint dislocation 111–113
- Hippocrates 4
- Hippocrates repositioning 162, 163
- hip total endoprosthesis (hip TEP) 116, 116
- humeral shaft fractures 169–171
- humerus fracture, proximal 167–169
- hybrid fixator 48, 48
- hydrocolloid dressing 11
- hyperbaric oxygen therapy 22
- hypertrophic chondrocytes 36
- hypertrophic nonunion 53, 54
- hypothermia 16
- hypovolemic shock 208, 209

**I**

iatrogenic wounds 7  
 IC *see* integument  
   closed  
 iliac dislocation 111  
 Ilizarov ring fixator  
   48, 48  
 immobilization 40–42  
 immunization 22  
 impaction fracture 89  
 impingement tests 165,  
   165  
 incised wounds 6  
 indirect arterial injury  
   27  
 indirect nerve injury  
   28  
 infants, CPR in  
   211–212  
 infections, surgical  
   abscess 18  
   empyema 19  
   gangrene 22–23  
   phlegmon 18–19  
   specific 20–23  
   summary 23  
   tetanus 20–22  
   treatment 19–20  
   wound 18–20  
 infraspinatus test 166  
 integument closed (IC)  
   33  
 integument open (IO)  
   33  
 internal chemical  
   injuries 17  
 internal fixator 49  
 intracerebral hematoma  
   79, 80  
 intracranial hematomas  
   78  
   epidural 79, 79  
   intracerebral 79, 80  
   subarachnoid 79, 80  
   subdural 79, 79–80  
 intramedullary nailing  
   46–47  
 IO *see* integument  
   open  
 ischemic muscle  
   necroses 27  
 isolated orbital floor  
   fracture 82

**J**

Jefferson fracture 85,  
   85  
 Jennet 77  
 Jobe test 165, 166  
 joint empyema 66  
 joint injuries *see also*  
   knee joint injuries  
   anatomical founda-  
   tion 63, 63  
   articular effusion  
   65–66  
   cartilage 65  
   contusion 64  
   dislocation 64  
   distorsion 63–64  
   fractures 65  
   ligament injuries  
   64, 64  
   summary 66  
 joint-preserving  
   operations 115  
 joint replacement  
   operations  
   115–116

**K**

Kirschner wires 46, 46  
 Kleinert dynamic splint  
   193, 193  
 knee joint injuries  
   anatomy 125  
   bony structures  
   123–124  
   capsular ligament  
   124–125  
   cruciate ligament  
   ruptures 125–127  
   dislocation 128–129  
   lateral ligament 128  
   meniscus 129–130  
   patellar dislocation  
   133, 133–134, 135  
   patellar fractures  
   130–133, 131  
   structure 124  
   summary 137  
   tibial head fractures  
   134–136, 135  
 Kocher repositioning  
   162, 163  
 kyphoplasty 92

**L**

laceration 6  
 lateral dislocation 32,  
   32  
 lateral ligaments 124  
   injuries 128  
 lateral midfacial frac-  
   tures 82  
 laterobasilar fractures  
   81  
 lavage 56  
 law of nines 13  
 LeFort fractures 82  
 leisure time accidents  
   4–5  
 lift-off test 166, 166  
 ligament injuries 64, 64  
   finger 190  
   knee joint 124–128  
   lateral 128  
   at upper ankle  
   144–145  
 Lisfranc joint disloca-  
   tion 151, 152  
 loading stability 43  
 local burn damage  
   12–13  
 local freezing 15–16  
 locking, of medullary  
   nails 47  
 lockjaw *see* tetanus  
 Loew 76  
 longitudinal growth 35  
 lower arm fracture  
   178–181  
 lower cervical spine  
   fractures (C3–C7)  
   87  
 lower extremity injuries  
   ankle 141–151  
   forefoot 151–153  
   hip 111–123  
   knee joint 123–137  
   lower leg 138–141,  
   151  
   midfoot 151–153  
   thigh 111–123  
 lower leg injuries  
   crus fractures  
   138–140  
   pilon tibial fractures  
   140–141  
   summary 151

lumbar spine injuries  
   88–92  
 lung injuries 97  
 luxation 64  
 lymphadenitis 18  
 lymphangitis (blood  
   poisoning) 18  
 lymphedema 51

**M**

maggots 10  
 magnetic resonance  
   imaging (MRI) 33  
 cruciate ligament  
   rupture 126  
   joint fracture 65  
   meniscus injury 130  
   muscle injury 24  
   pulmonary artery  
   embolism 52  
 Maisonneuve fracture  
   142, 143  
 malleolar fractures  
   141–144, 142  
 march fracture 151  
 marrow nail with no  
   boring 47  
 Marti 146  
 Matsen repositioning  
   162, 163  
 McLaughlin loop 132  
 mechanical wounds 6–7  
 median nerve injury  
   (hand of blessing)  
   29, 29  
 mediastinal emphysema  
   98  
 mediastinitis 98  
 medullary nails 46–47  
 meninges 78, 78  
 meniscus 124  
   injuries 129–130  
 metacarpal bone  
   fractures 188–189  
 metastases 31  
 metatarsal bone  
   fractures 151  
 middle column 88  
 midfacial fractures 82  
 midfoot injuries  
   151–153  
 Milch repositioning  
   162, 163

- mild TBI 76  
 moderate TBI 76  
 monacle hematoma  
 81, 81  
 monofixator 48, 48  
 Monteggia fractures  
 178, 178, 180–181  
 movement stability 43  
 MRI *see* magnetic resonance imaging  
 Müller, Maurice E. 33  
 multifragmentary fractures 31, 32  
 multiple trauma 207  
 acute phase 208–209  
 first aid 209–212  
 summary 213  
 surgical care 212  
 muscle injuries  
 contusions 24  
 fiber tears 24  
 myositis ossificans  
 25, 25  
 pulled muscles 24  
 tears 24  
 treatment of 24–25  
 muscle tests 165–166  
 myositis ossificans  
 25, 25
- N**
- nasal fractures 82  
 National Institute  
 of Neurological  
 Disorders and  
 Stroke, U. S. 76  
 navicular bone fracture  
 151  
 necroses  
 coagulation 16  
 colliquation 16  
 femoral head 117, 117  
 ischemic muscle 27  
 Neer 165, 168  
 nerve injuries 28–30  
*neurapraxia* 28, 28–29  
 neurogenic shock 208,  
 210  
*neurotmesis* 28, 28–29  
 neutralization plates  
 45, 45  
 90° supraspinatus test  
 165, 166
- nontraumatic fractures  
 31  
 nonunion (false joint)  
 53–54, 54, 156, 181  
 nosocomial infections  
 18
- O**
- oblique fractures 31, 31  
 obturator dislocation  
 112  
 odontoid fractures  
 86–87  
 olecranon fractures  
 175–176  
 one-technician model,  
 of cardiac compressions 210  
 open fractures 33  
 open pneumothorax 95  
 open TBI 77  
 open wounds 6, 10  
 osteitis  
 amputation 58  
 callus distraction  
 57–58  
 chronic 55  
 classification of  
 54–55  
 clinical 55  
 diagnosis 55–56  
 pathogenesis 55  
 prognosis 58  
 segment resection  
 57–58  
 surgical removal  
 56–57  
 treatment of 56,  
 56–57  
 osteoporosis 114  
 osteosynthesis  
 biological 43  
 cemented 44  
 connection 43  
 materials 43–44  
 plate 45–46  
 screw 44, 44
- P**
- painful arc 165, 165  
 pancreatic injuries  
 103–104
- paradoxical breathing  
 93  
 passive immunization,  
 tetanus and 22  
 patella 124  
 dancing 125  
 dislocation 133,  
 133–134, 135  
 fractures 130–133,  
 131  
 tendon rupture 27  
 pathological fracture 31  
 Pauwels 114  
 Payr sign 130  
 PCL *see* posterior  
 cruciate ligament  
 pelvic injuries  
 acetabulum fractures  
 108–109  
 pelvic fractures  
 105–108  
 summary 110  
 perilunar dislocation  
 187, 187  
 peripheral fractures 146  
 pertrochanteric femoral  
 fractures 118–119  
 PFL *see* posterior  
 fibulotalar ligament  
 phalanges fractures  
 151  
 phenprocoumon 52  
 phlebothrombosis  
 50–52  
*phlegmasia cerulea  
 dolens* 51  
 phlegmon 18–19  
 physical injuries  
 burns 12–15  
 cold damage 15–16  
 summary 17  
 pilon tibial fractures  
 140–141  
 pinless fixator 48, 48  
 Pipkin 113–114  
 plate osteosynthesis  
 45–46  
 pleural injuries  
 empyema 97  
 hemothorax 97  
 pneumothorax 95–96  
*pneumencephalon* 81  
 pneumothorax injuries  
 95–96
- PNF *see* proprioceptive  
 neuromuscular  
 facilitation  
 positional stability 43  
 posterior column 88  
 posterior cruciate  
 ligament (PCL) 124  
 posterior fibulotalar  
 ligament (PFL) 144  
 postthrombotic  
 syndrome 51–52  
 primary cerebral  
 damage 76  
 primary fracture  
 healing 34, 34  
 primary wound healing  
 8, 8  
 proprioceptive neuro-  
 muscular facilita-  
 tion (PNF) 127  
*Proteus* 18  
 proximal humerus  
 fracture 167–169  
 proximal radius fracture  
 176, 177  
*Pseudomonas* 18  
 pseudoparalysis 164  
 pubic dislocation 112  
 pulled muscles 24  
 pulmonary artery  
 embolism 52  
 puncture wound 6
- R**
- radial nerve injury  
 (wrist drop) 29, 29  
 radiography 168  
 conservative fracture  
 treatment 40  
 crus fractures 138  
 distal femoral  
 fractures 121  
 femoral shaft  
 fractures 119  
 fractures 33  
 hip joint dislocation  
 112  
 lower arm shaft  
 fracture 179  
 patellar dislocation  
 133  
 rotator cuff rupture  
 165

- radius fracture
    - distal 181, 181–184, 182, 183
    - isolated 178
    - proximal 176, 177
  - reimplantation 195–196, 196
  - relapsing traumatic
    - patellar dislocation 133
  - repair phase
    - of burns 14
    - of wound healing 9
  - repositioning 39, 162, 163
  - resorption zone 36
  - retention 39
  - retrograde amnesia 76
  - rib fractures 93–94
  - risus sardonius* 20
  - Rolando fracture 188
  - roll-glide mechanism 124
  - Röntgen, Wilhelm
    - Conrad 4
  - rotational malalignment 122
  - rotator cuff rupture 164–167
- S**
- Salter/Harris 36
  - scaphoid fracture 185–186
  - scapula fractures 159–160
  - Schanz neck brace 85
  - Schanz screws 47
  - sciac dislocation 112
  - SCJ *see* sternoclavicular joint
  - scratch wounds 7
  - screw osteosynthesis 44, 44
  - secondary cerebral
    - damage 76
  - secondary fracture
    - healing 34, 34
  - secondary wound
    - healing 8, 8
  - second-degree burns 12, 14
  - second-degree chemical
    - burns 16
  - second-degree nerve injury (*axonotmesis*) 28, 28–29
  - segmental transport 57
  - segment resection 57–58
  - septic shock 208, 210
  - set screw 44, 44
  - severe TBI 76
  - shaft fractures
    - femoral 119–120
    - humeral 169–171
    - long bones 35
    - lower arm 178–181
  - sharp abdominal
    - trauma 101–102
  - shock
    - burn 13
    - position 209
    - spiral 208
    - treatment 209–210
  - shoulder dislocation 160, 161–164
  - shoulder girdle injuries
    - ACJ dislocation 157–159
    - clavicle fractures 154–156
    - rotator cuff rupture 164–167
    - scapula fractures 159–160
    - SCJ dislocation 156–157
    - shoulder dislocation 160, 161–164
    - summary 171
  - six-hour rule 9
  - ski thumb 190
  - skull injuries
    - brain death 83
    - cerebral edema 77–78
    - fractures 81–82
    - intracranial
      - hematomas 78–80
    - summary 83
    - TBIs 76–77
  - skull trepanation 4
  - Smith fracture 181
  - soft tissue, fractures
    - and 32–33
  - soft tissue injuries
    - muscle 24–25
    - nerve 28–30
  - summary 30
  - tendon 25–27, 145–146, 191–195
  - vascular 27–28
  - sonography 165
  - special abdominal
    - injuries 102–104
  - special traumatology 75
  - abdominal injuries
    - 101–104
  - lower extremity
    - injuries 111–153
  - pelvic injuries
    - 105–110
  - skull injuries 76–83
  - spinal injuries 84–92
  - thoracic injuries
    - 93–100
  - spectacle hematoma 81, 81
  - spinal fusion *see* spondylodesis
  - spinal injuries
    - cervical spine 84–87
    - lumbar 88–92
    - summary 92
    - thoracic 88–92
  - spiral fractures 31, 31
  - splenic rupture
    - 102–103
  - spondylodesis (spinal fusion) 91
  - sprain 63–64
  - SRD *see* sympathetic reflex dystrophy
  - stability 43
  - Staphylococcus* 18
  - static locking 47
  - Steinmann signs
    - 129–130
  - sterile compression
    - dressing 10–11
  - sternoclavicular joint (SCJ), dislocation 156–157
  - sternum fractures 94
  - Stone Age 4
  - Streptococcus* 18
  - subarachnoid
    - hematoma 79, 80
  - subdural hematoma 79, 79–80
  - subscapularis test 166
  - subtrochanteric
    - femoral fractures 118–119
  - Sudeck, Paul Hermann 60
  - surgical infections
    - abscess 18
    - empyema 19
    - gangrene 22–23
    - phlegmon 18–19
    - specific 20–23
    - summary 23
    - tetanus 20–22
    - treatment 19–20
    - wound 18–20
  - surgical neck 167
  - surgical treatment 42
    - acetabulum 109
    - ankle ligament 145
    - calcaneus 149
    - clavicle 156
    - cruciate ligament 126
    - crus 139
    - distal humerus 173
    - distal radius 183
    - dynamic
      - screw-and-plate systems 48, 49
    - elbow 174
    - external fixator
      - 47–48, 48
    - femoral head 113
    - femoral neck
      - 115–116
    - hand 185
    - humeral shaft 170
    - humerus, proximal
      - 168–169
    - internal fixator 49
    - intramedullary
      - nailing 46–47
    - lower arm shaft
      - 179–180
    - malleolar 143–144
    - metacarpal bones 189
    - multiple trauma 212
    - olecranon 175
    - osteosynthesis
      - materials 43–44
    - plate osteosynthesis
      - 45–46
    - prompt 43
    - radius, proximal 176
    - rib 94

- rotator cuff 166–167  
 screw osteosynthesis 44, 44  
 shoulder 163  
 spinal 91  
 stability 43  
 talus 147  
 tension banding 46  
 wires 46, 46  
 sympathetic reflex dystrophy (SRD) 60–61  
 systemic burn damage 13–14
- T**
- tachycardia 52  
 talus fracture 146–148, 147  
 tarsal bone fractures 152  
 TBIs *see* traumatic brain injuries  
 tears 6  
 of muscle 24  
 Teasdale 77  
 temporary surface closure 10  
 tendinous injuries, of hand 191–195  
 tendon injuries  
 Achilles 26, 26, 145–146  
 biceps 26, 26  
 extensor 193–195  
 flexor 191–193  
 patellar 27  
 treatments of 26–27  
 tension banding 46  
 tension pneumothorax 95–96  
 tetanus 20–22  
 thermal wounds 7  
 thigh injuries  
 distal femoral fractures 121, 121–122, 122  
 femoral head fractures 113–114  
 femoral neck fractures 114, 114–117, 115  
 femoral shaft fractures 119–120  
 hip joint dislocation 111–113  
 pertrochanteric femoral fractures 118–119  
 subtrochanteric femoral fractures 118–119  
 summary 123  
 third-degree burns 12, 12, 14  
 third-degree chemical burns 16  
 third-degree nerve injury (*neurotmesis*) 28, 28–29  
 Thompson 145  
 thoracic injuries  
 aortic 98–99  
 cardiac 98  
 diaphragm 99  
 esophagus 98  
 hemothorax 96  
 lungs 97  
 pleural empyema 97  
 pneumothorax 95–96  
 rib fractures 93–94  
 sternum fractures 94  
 summary 100  
 thoracic spine injuries 88–92  
 three-column model (Denis) 88, 88  
 thrombectomy 51  
 thrombolysis 51  
 thrombosis 42  
 phlebothrombosis 50–52  
 tibial head fractures 134–136, 135  
 toe fractures 151, 153  
 Tönnis 76  
 torus fracture 35, 35  
 Tossy 157–158  
 total hip replacement 116, 116  
 traction 42, 42  
 traction screw 44, 44  
 traffic accidents 5  
 transverse fractures 31, 31  
 trauma scores 209  
 trauma surgery, history of 4  
 traumatic brain injuries (TBIs) 76–77  
 traumatic fractures 31  
 traumatic myositis ossificans 174  
 traumatic shoulder dislocation 161  
 trepanation 4  
 trismus 20  
 tuberosity–joint angle 149  
 two-step aortic rupture 98  
 two-technician model, of cardiac compressions 210
- U**
- ulna fractures 178  
 ulnar nerve injury (claw hand) 29, 29  
 unhappy triad 125  
 unilateral fixator (monofixator) 48, 48  
 unreamed tibial nail (UTN) 139  
 upper arm injuries  
 humeral shaft fractures 169–171  
 humerus fracture, proximal 167–169  
 summary 171  
 upper extremity injuries  
 elbow 172–177  
 hand 185–197  
 lower arm 178–181  
 shoulder girdle 154–167, 171  
 upper arm 167–171  
 wrist 181–184  
 urogenital injuries 104  
 UTN *see* unreamed tibial nail
- V**
- vacuum sealing 10, 10, 33  
 vascular injuries  
 arterial 27  
 venous 28  
 venous injuries 28  
 venous system and valves 50  
 ventilation 210  
 ventral spondylolysis 91, 91  
 Virchow triad 50  
 Volkmann contracture 27  
 Volkmann triangle 142, 142  
 voluntary shoulder dislocation 161
- W**
- Weber 124, 142  
 whiplash injuries 84  
 Wiberg 134  
 Winterstein fracture 188  
 wires 46, 46  
 work accidents 4  
 wounds  
 care 9–11  
 chemical 7  
 definition and classification 6–7  
 dressings 10–11  
 healing 8–9  
 infections 18–20  
 mechanical 6–7  
 summary 11  
 thermal 7  
 treatment 6–11  
 wrist drop 29  
 wrist fracture 181–184