Введение в травматологию

Классификация переломов по этиологическому фактору:

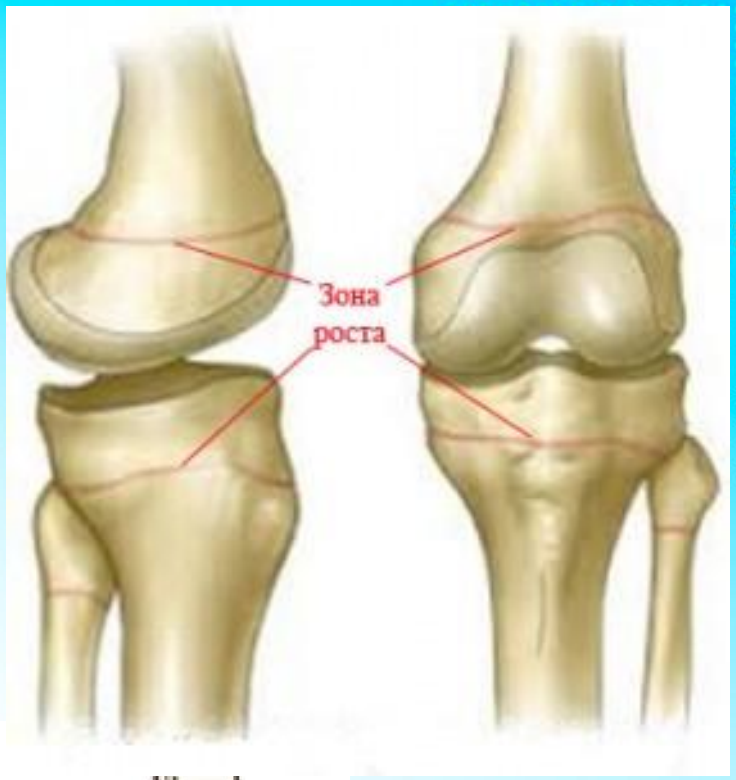
- Травматические
- Нетравматические (патологические)

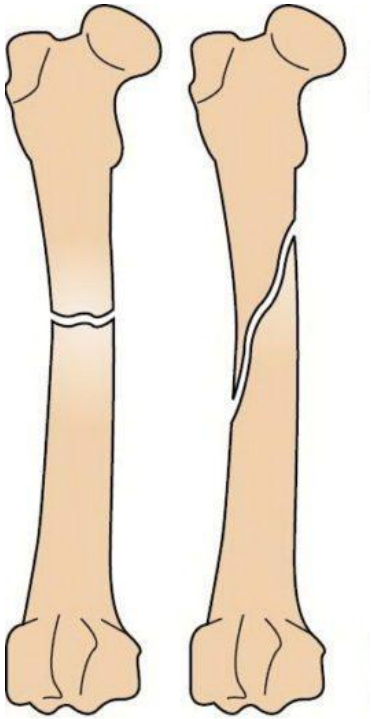
Классификация переломов в зависимости от повреждения кожных покровов:

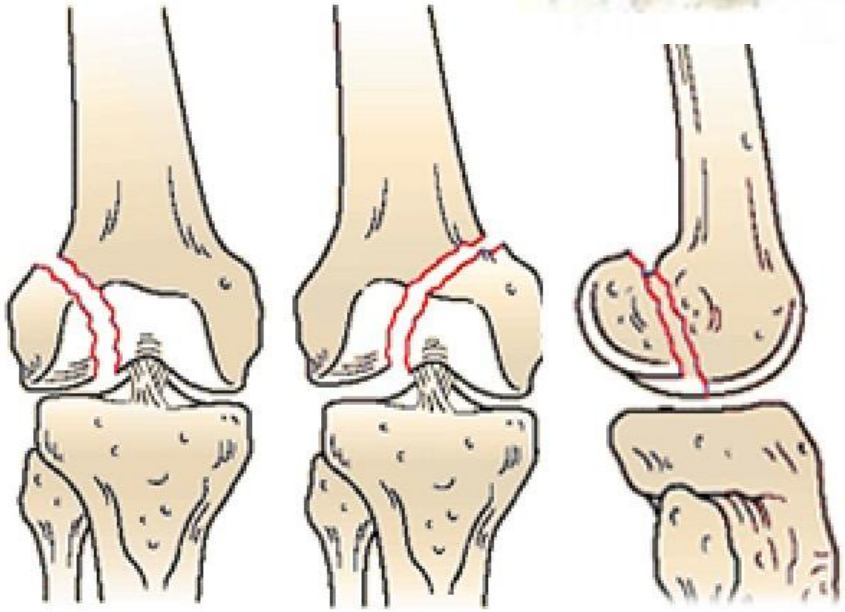
1. Открытые
   - Первичнооткрытые
   - Вторичнооткрытые
2. Закрытые.
   - Неполные
   - Полные

По локализации

- Диафизарные
- Метафизарные
- Эпифизарные





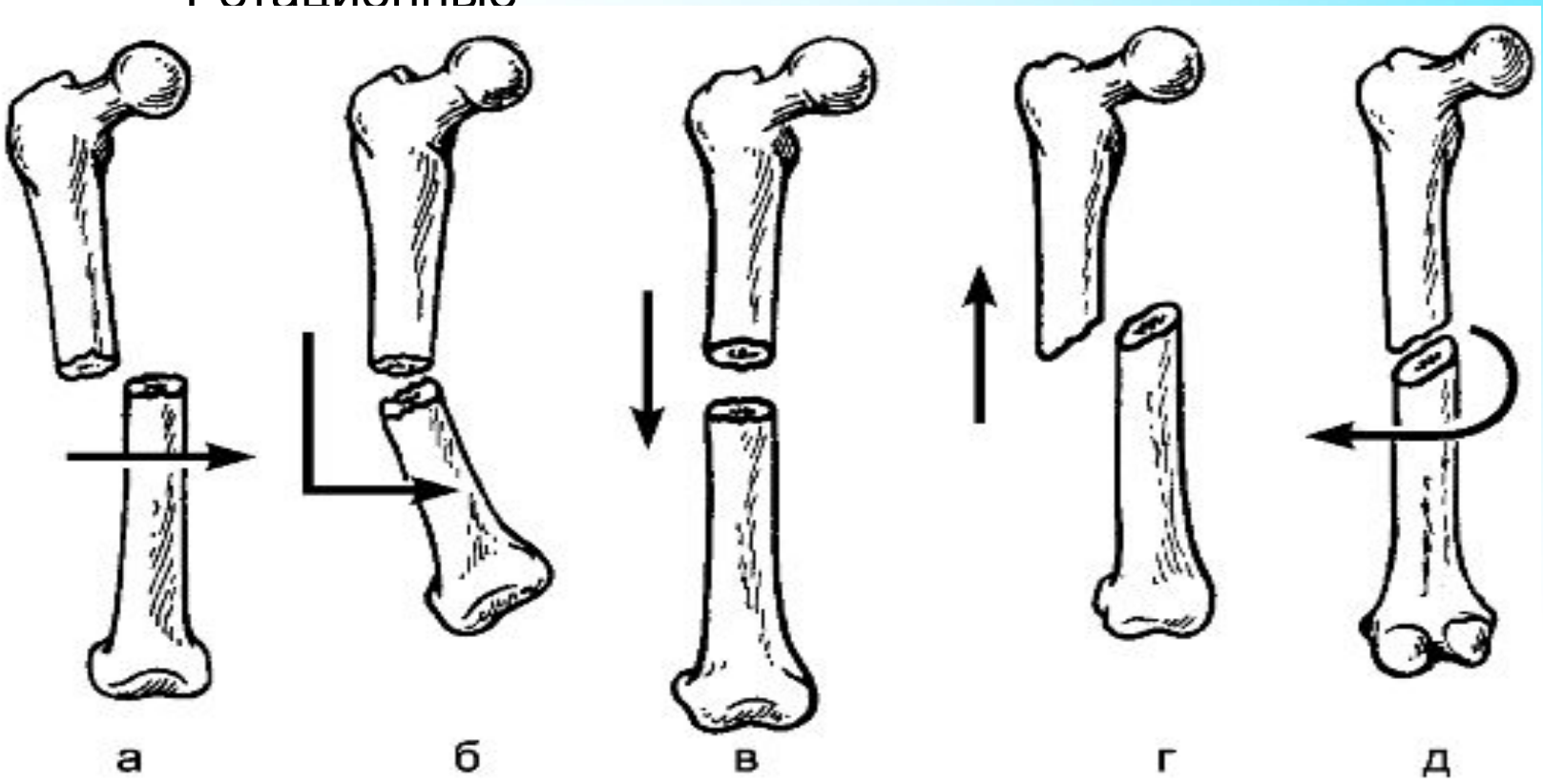


В зависимости от направления плоскости излома различают:

- Поперечные
- Косые
- Винтообразные
- Продольные
- Многооскольчатые

Виды смещения

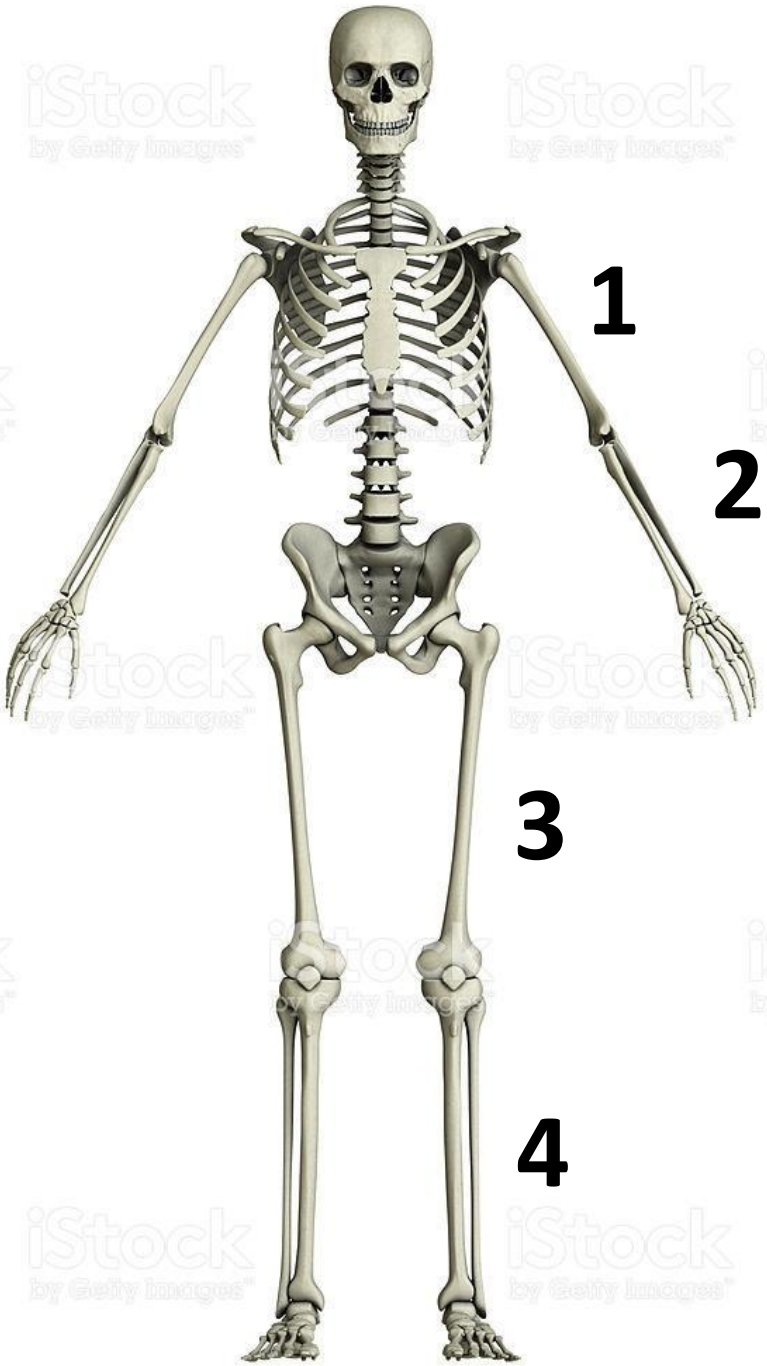
- По длине
- По ширине
- Под углом
- Ротационные



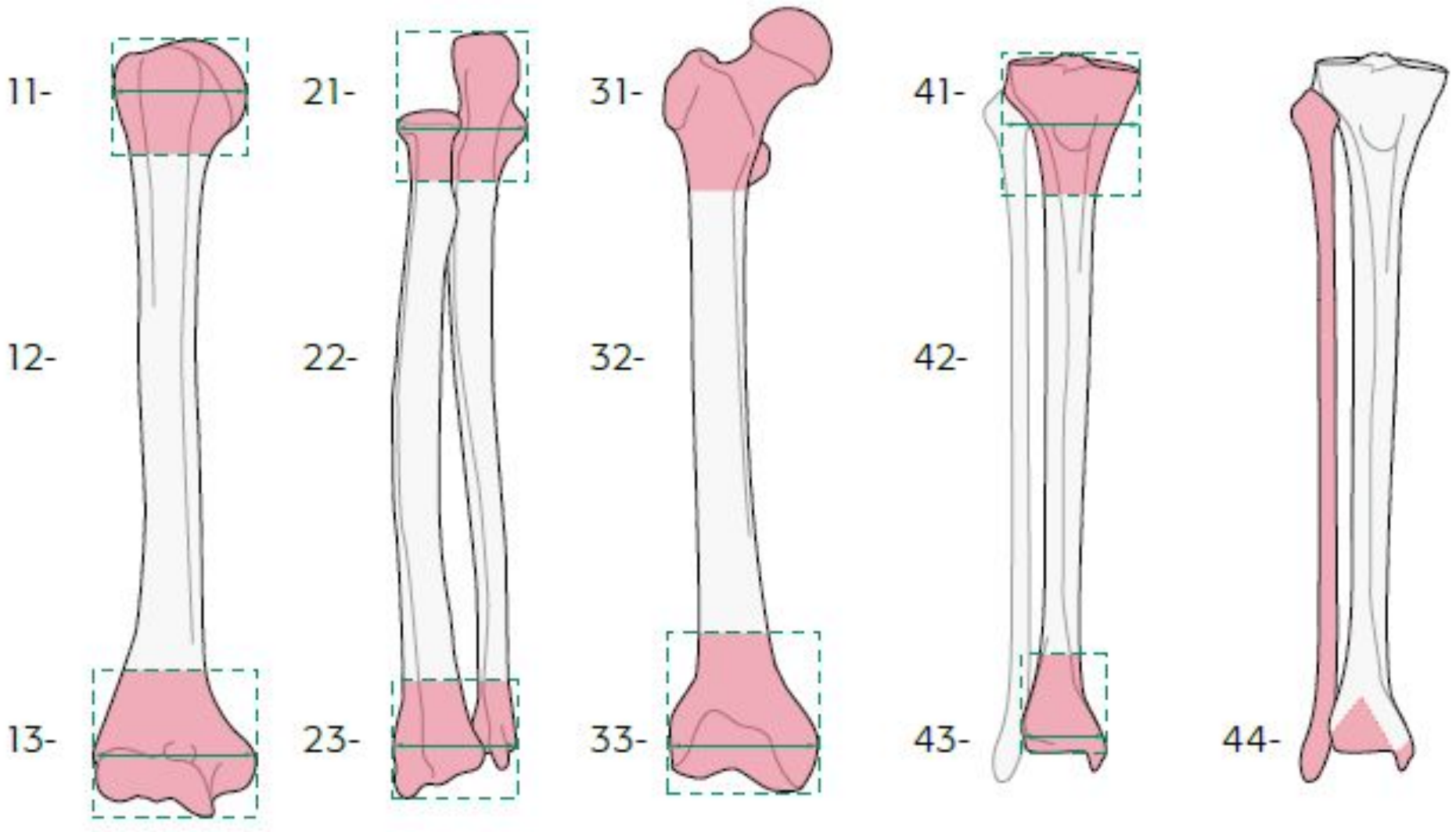
Классификация АО

32-B1

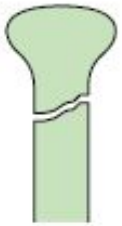
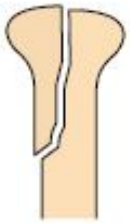
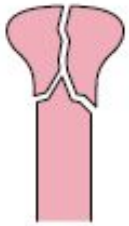
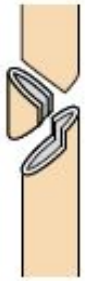
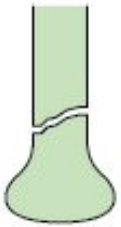
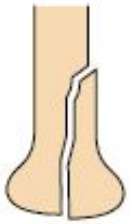
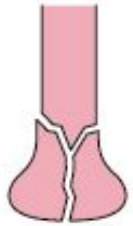
32-



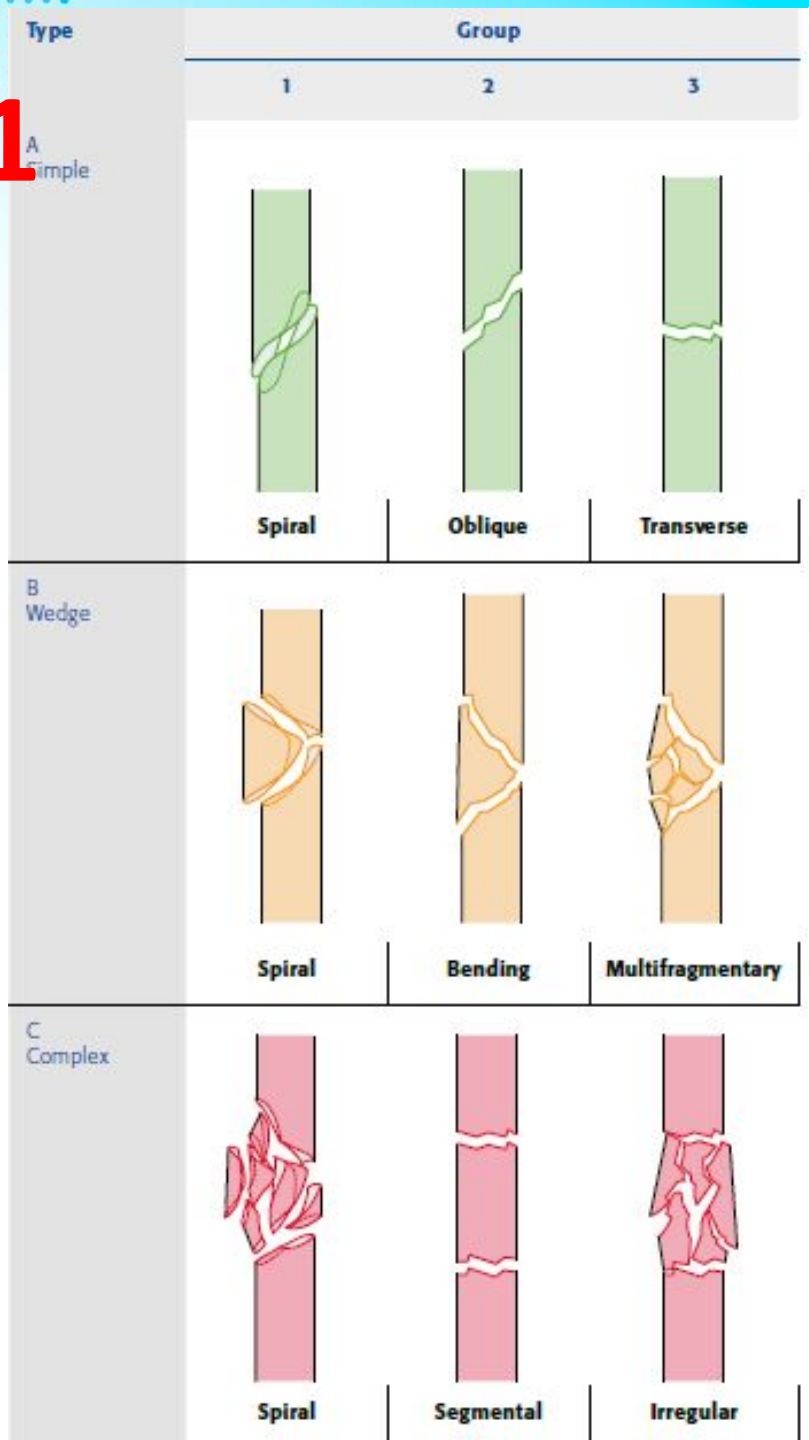
32-B1

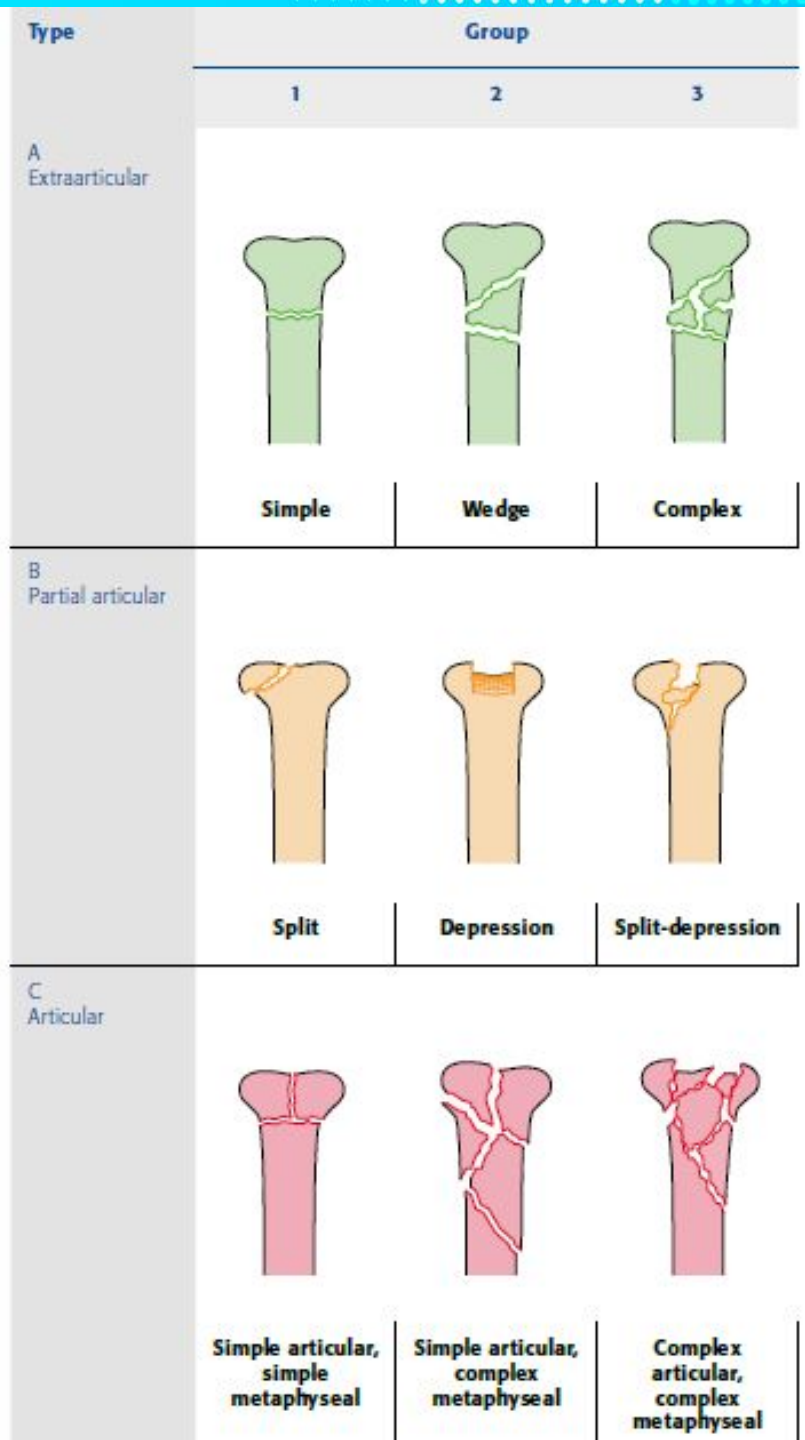


32-B1

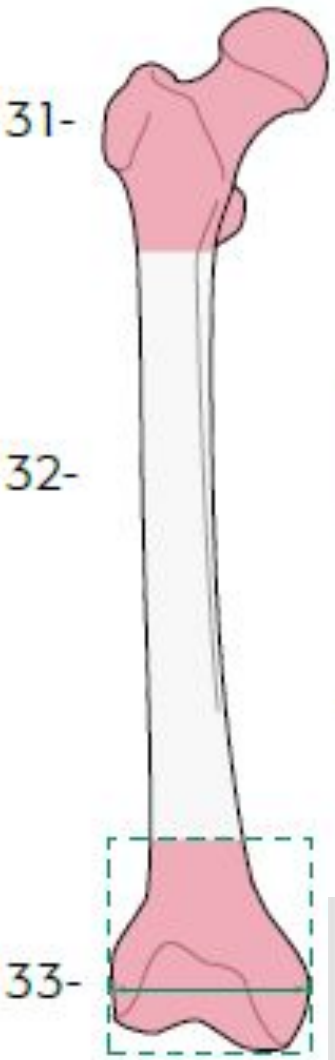
	A	B	C
1 Proximal	 **Extraarticular** No involvement of displaced fractures that extend into the articular surface	 **Partial articular** Part of the articular component is involved, leaving the other part attached to the meta-/diaphysis	 **Complete articular** Articular surface involved, metaphyseal fracture completely separates the articular component from the diaphysis
2 Diaphyseal	 **Simple** One fracture line, cortical contact between fragments exceeds 90% after reduction	 **Wedge** Three or more fragments, main fragments have contact after reduction	 **Complex** Three or more fragments, main fragments have no contact after reduction
3 Distal	 **Extraarticular**	 **Partial articular**	 **Complete articular**

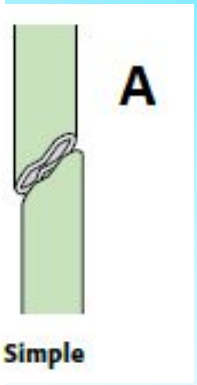
32-B1

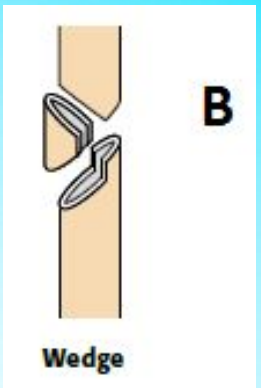

Type
Group
1
2
3
A
Simple
Spiral
Oblique
Transverse
B
Wedge
Spiral
Bending
Multifragmentary
C
Complex
Spiral
Segmental
Irregular

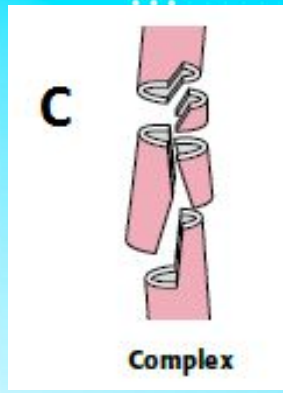

Type
Group
1
2
3
A
Extraarticular
Simple
Wedge
Complex
B
Partial articular
Split
Depression
Split-depression
C
Articular
Simple articular, simple metaphyseal
Simple articular, complex metaphyseal
Complex articular, complex metaphyseal

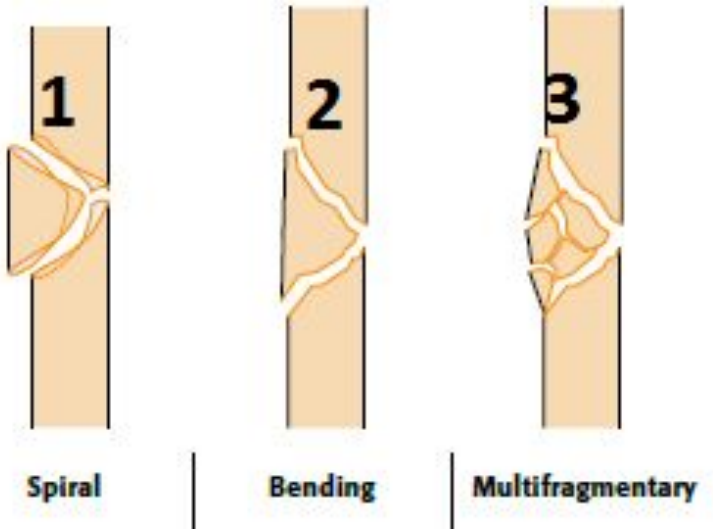
32-B1


31-
32-
33-


A
Simple


B
Wedge


C
Complex

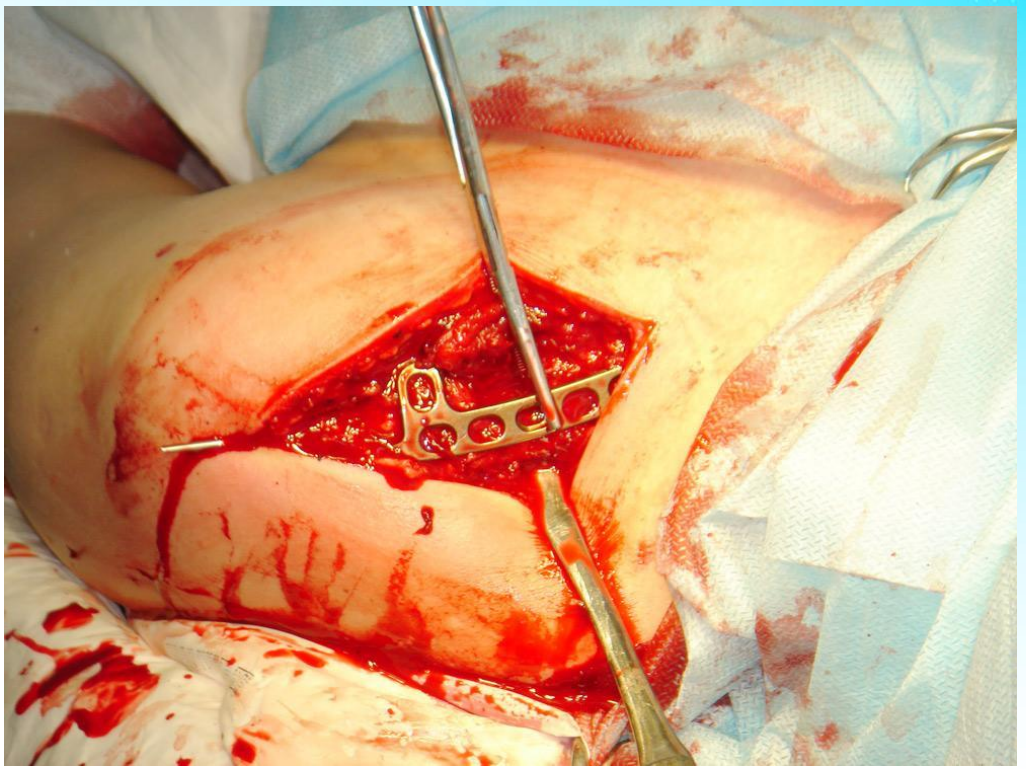

1
2
3
Spiral
Bending
Multifragmentary

Регенерация костной ткани

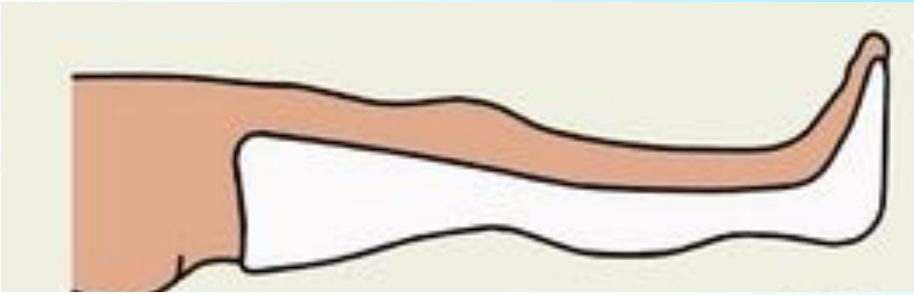
Лечение переломов

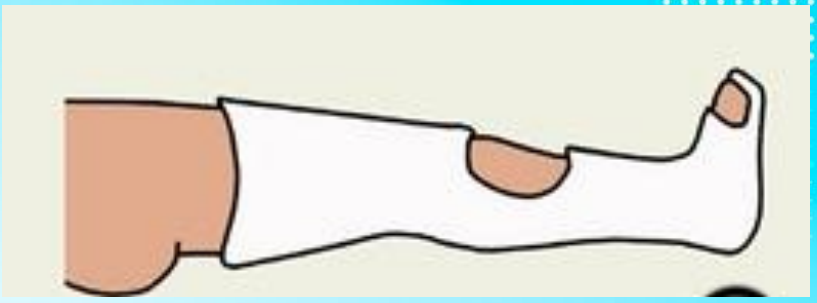
Консервативное

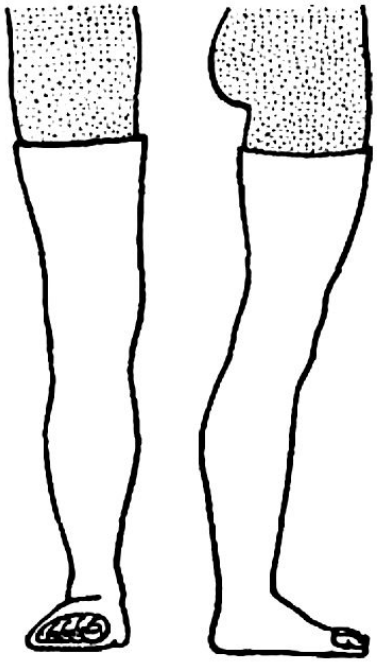
Оперативное



Гипсовые повязки





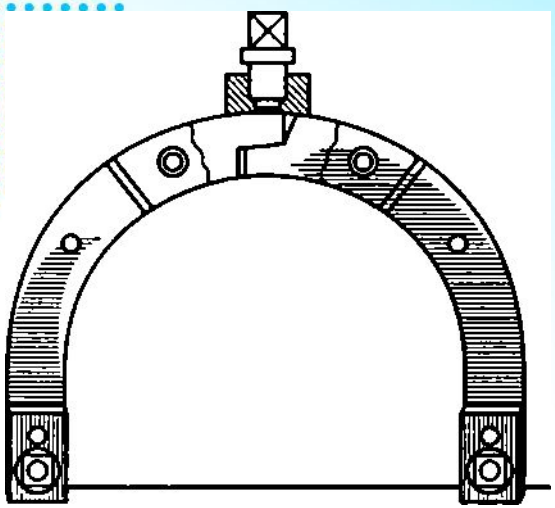


Целлакаст

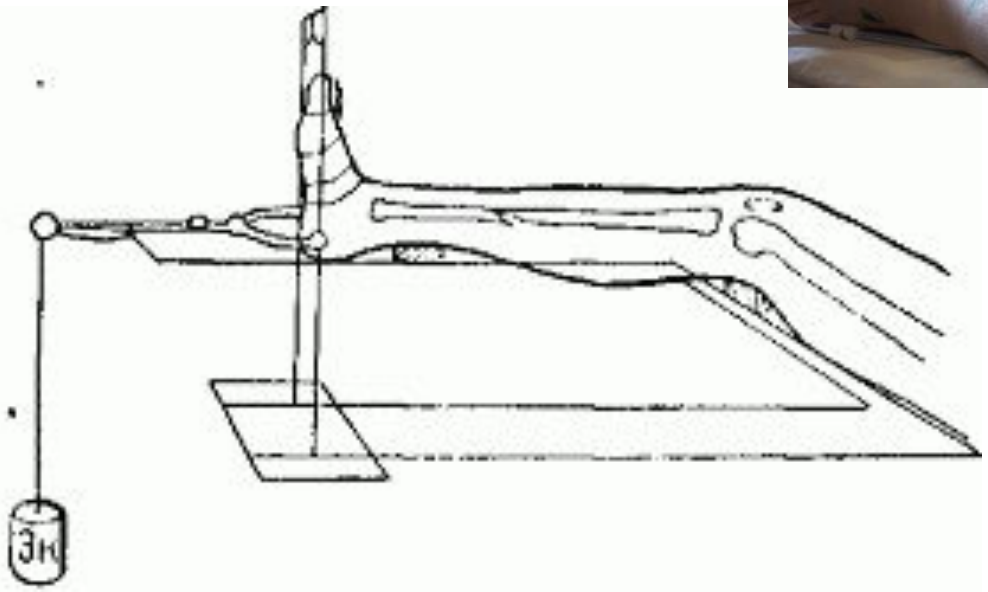
Гипсовая повязка

Турбокаст

Скелетное вытяжение



Скоба ЦИТО и спица Киршнера




Длительная иммобилизация
Остеопороз
Мышцы не работают
Атрофия мышц
Слабое кровоснабжение
Нарушение трофики суставных тканей
Контрактура
Длительная реабилитация
Восстановление функции
?

Почему заживление перелома занимает 6-12 недель, а человек возвращается к работе только через 6-12 месяцев?

AO/ASIF

AO - Arbeitsgemeinschaft für **O**steosynthesefragen (1958)

ASIF - **A**ssociation for the **S**tudy of **I**nternal **F**ixation

Цель – обеспечить такое лечение, которое позволяет как можно раньше восстановить функцию.

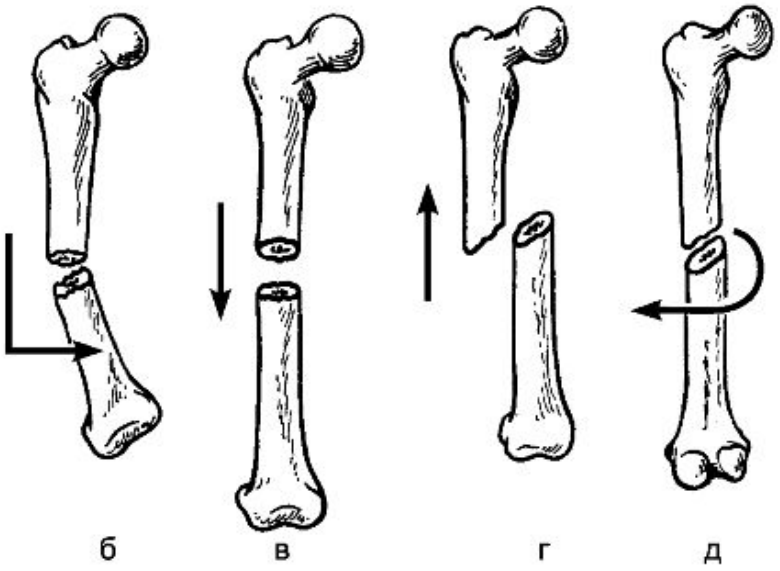
Принципы АО

1. Анатомическая репозиция и фиксация
2. Обеспечение абсолютной или относительной стабильности в зависимости от перелома
3. Сохранение кровоснабжения мягких тканей и кости путем бережной репозиции и осторожного обращения с тканями
4. Ранняя и безопасная мобилизация и реабилитация повреждённого участка и пациента в целом

Требования к репозиции

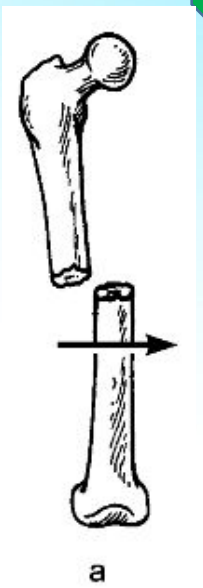
Обязательно устранить смещение:

- По длине
- Под углом
- Осевое



Допустимо:

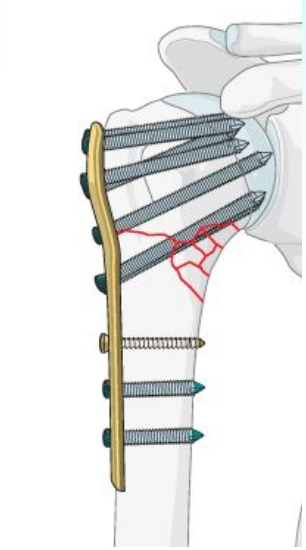
- Смещение по ширине



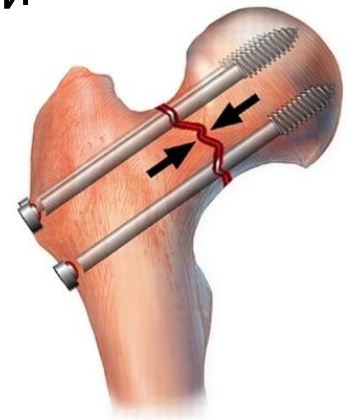
Остеосинтез

Внутренний

- Накостный



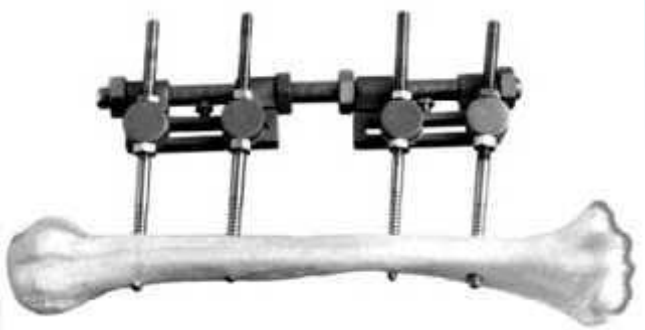
- Внутрикостный



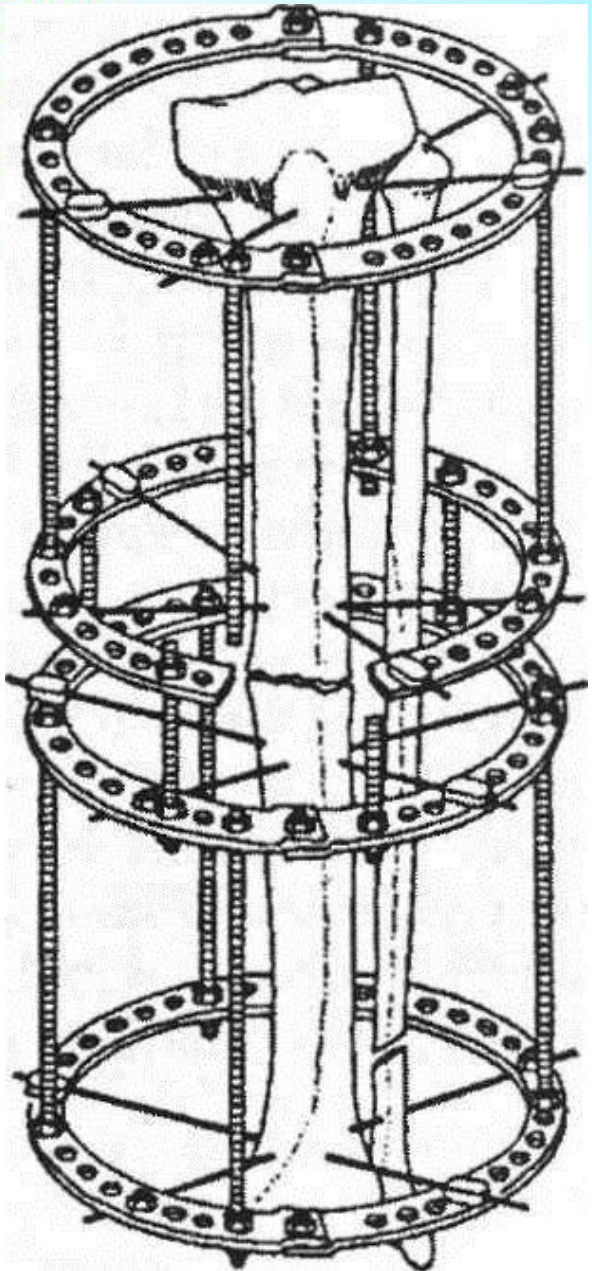
Наружный

- Спицевые аппараты

- Стержневые аппараты

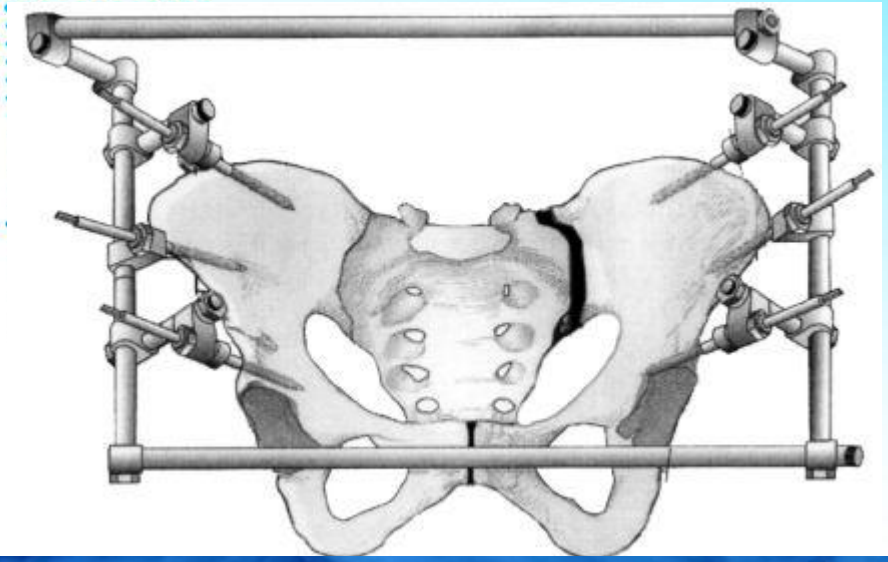


Спицевые аппараты



ЧКДО аппаратом Илизарова

Стержневые аппараты



Показания к внешней фиксации

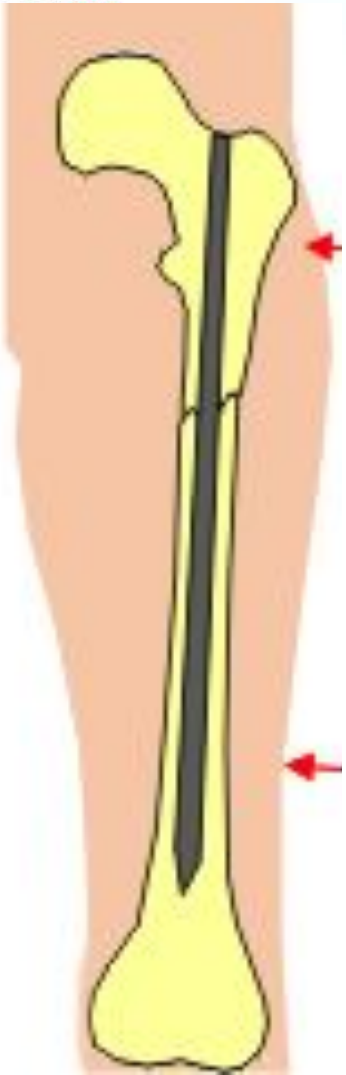
1. **Временная фиксация**
   - Политравма
   - Открытый перелом
   - Невозможность проведения внутреннего остеосинтеза в данный момент
   - Как метод репозиции
2. **Окончательная фиксация**
   - Состояние больного не позволяет провести открытую операцию
   - Некоторые ортопедические ситуации (лечение деформаций, удлинение костей)

Интрамедуллярный остеосинтез

Показания – диафизарные переломы

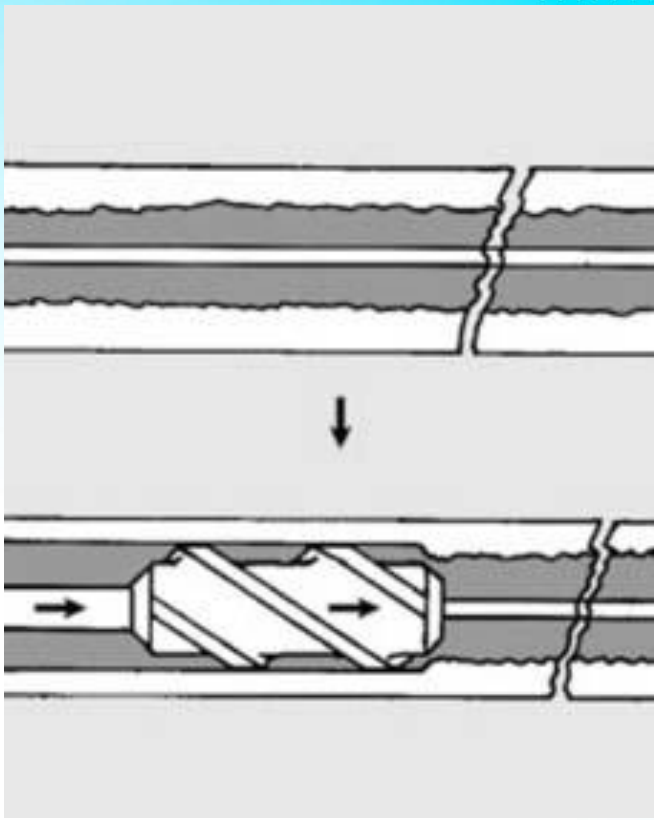
Интрамедуллярный остеосинтез

Non-locked

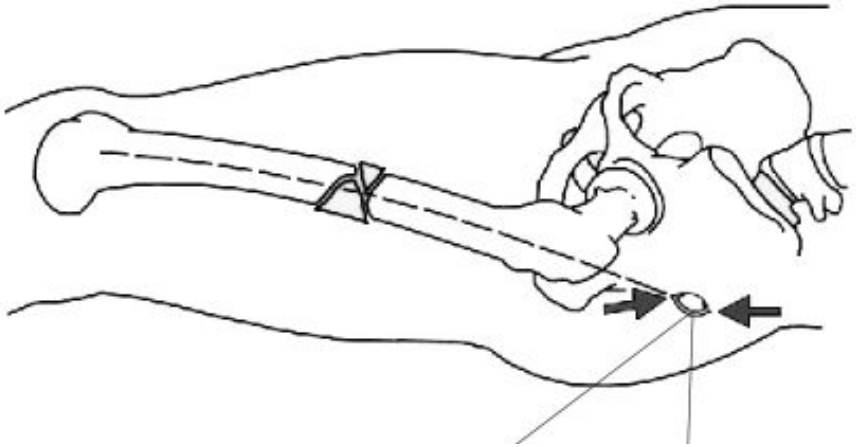


Locked

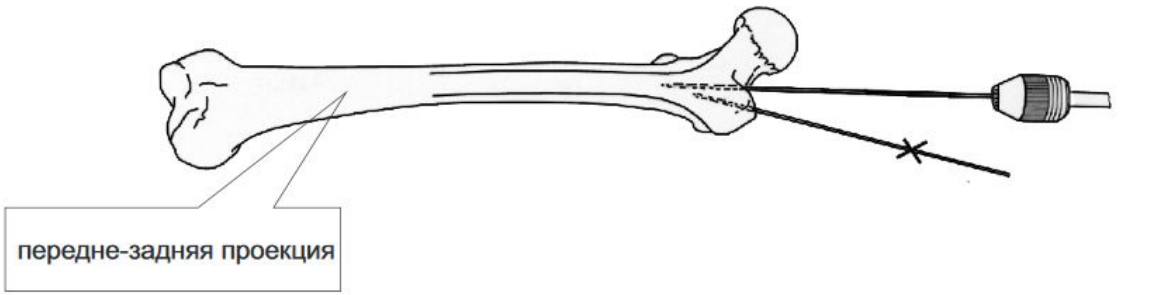
Reamed

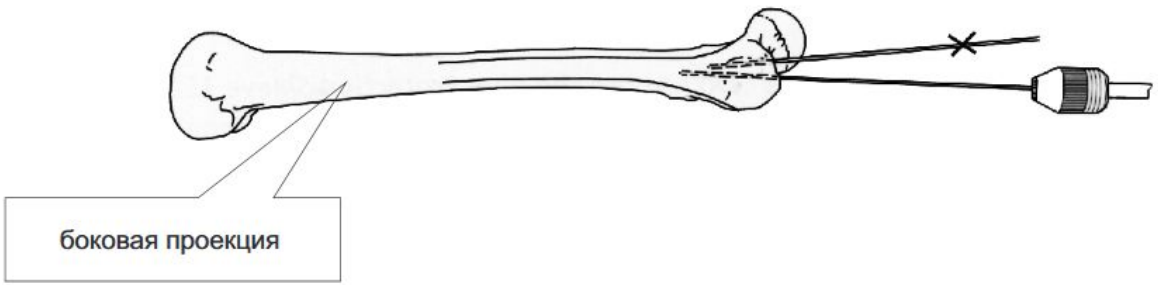


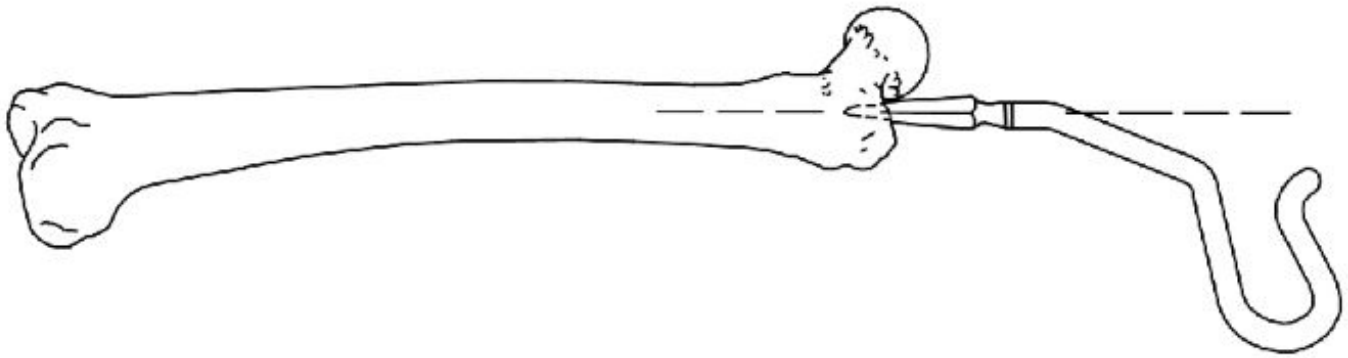
БИОС –блокированный интрамедуллярный остеосинтез

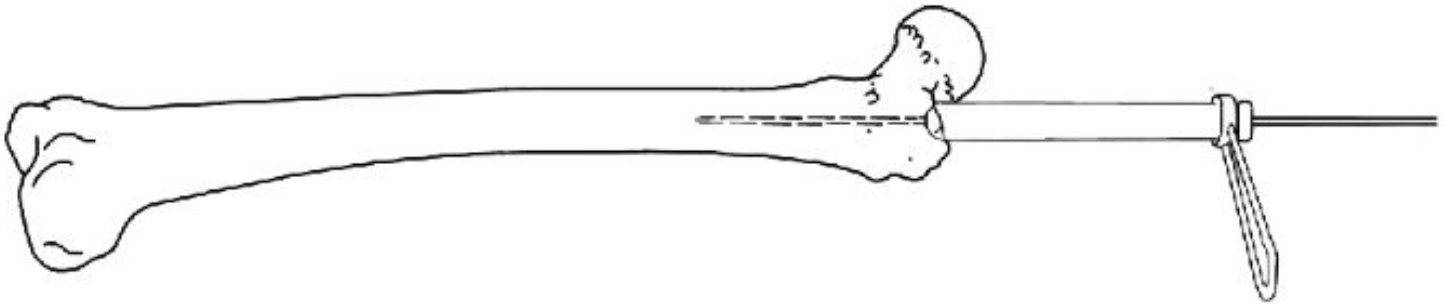


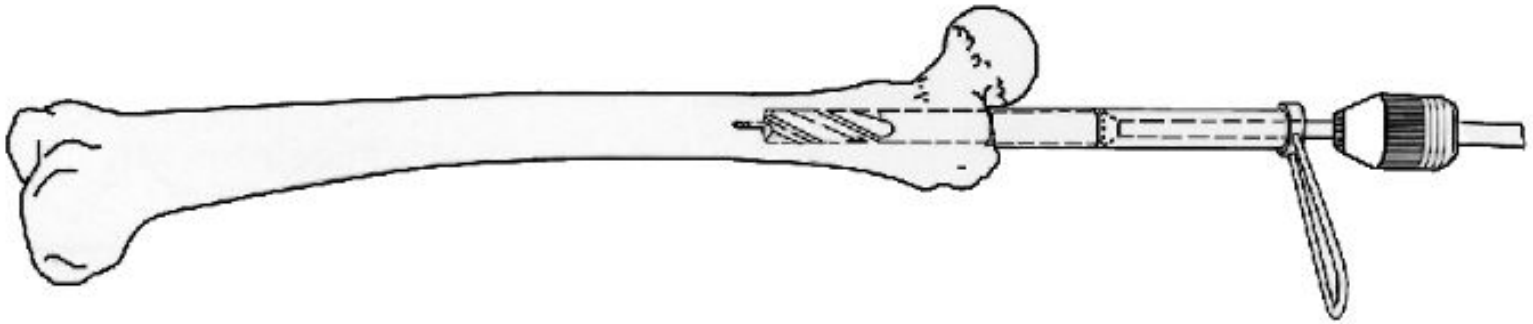
Введение направляющей спицы:

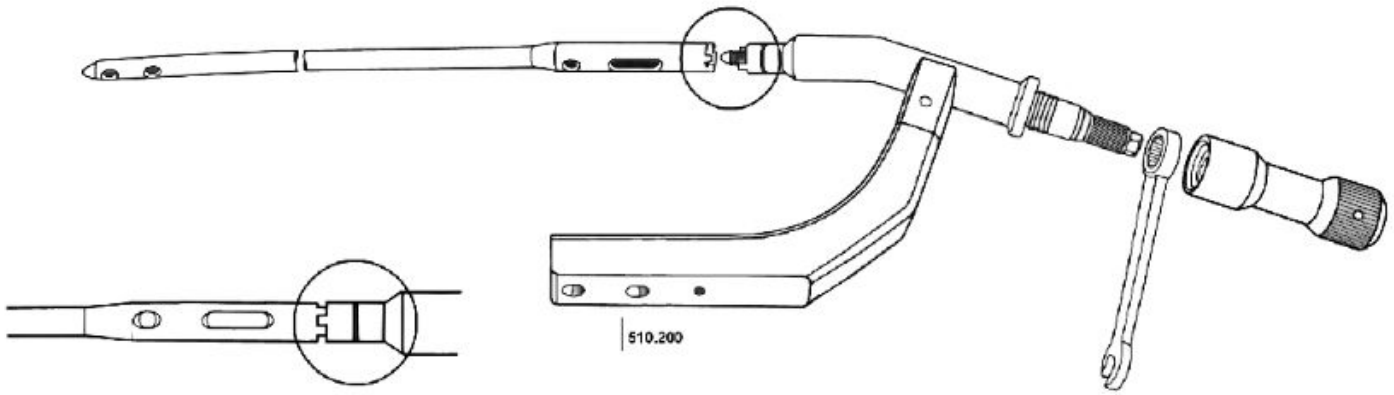


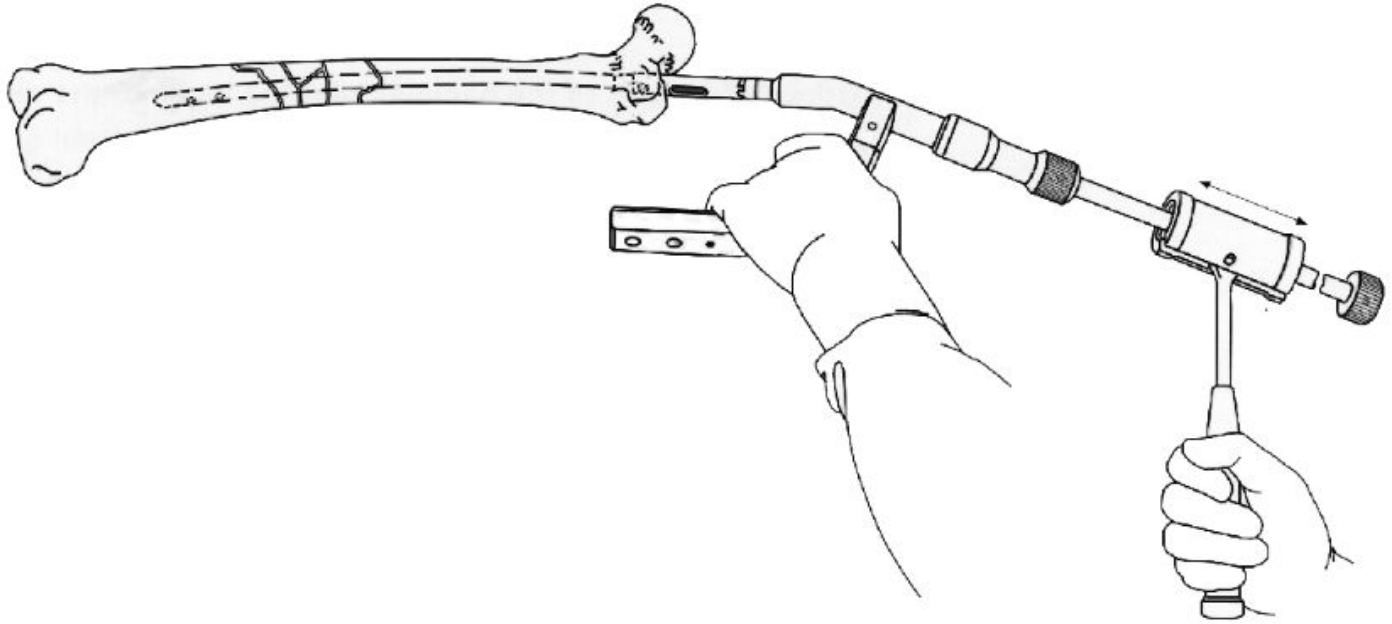


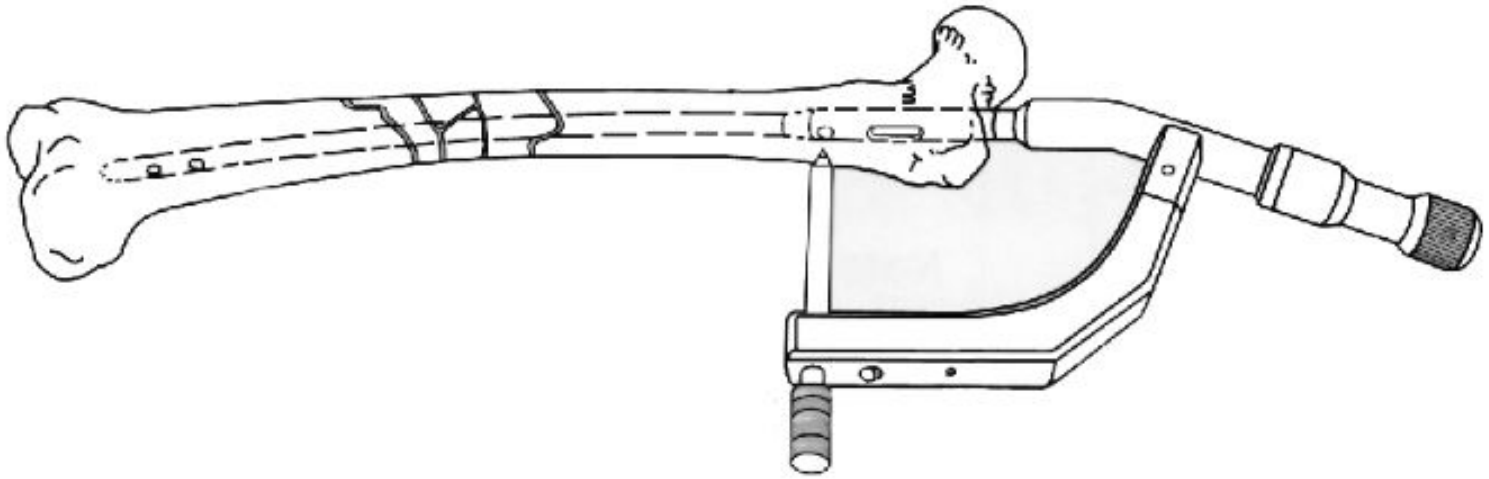


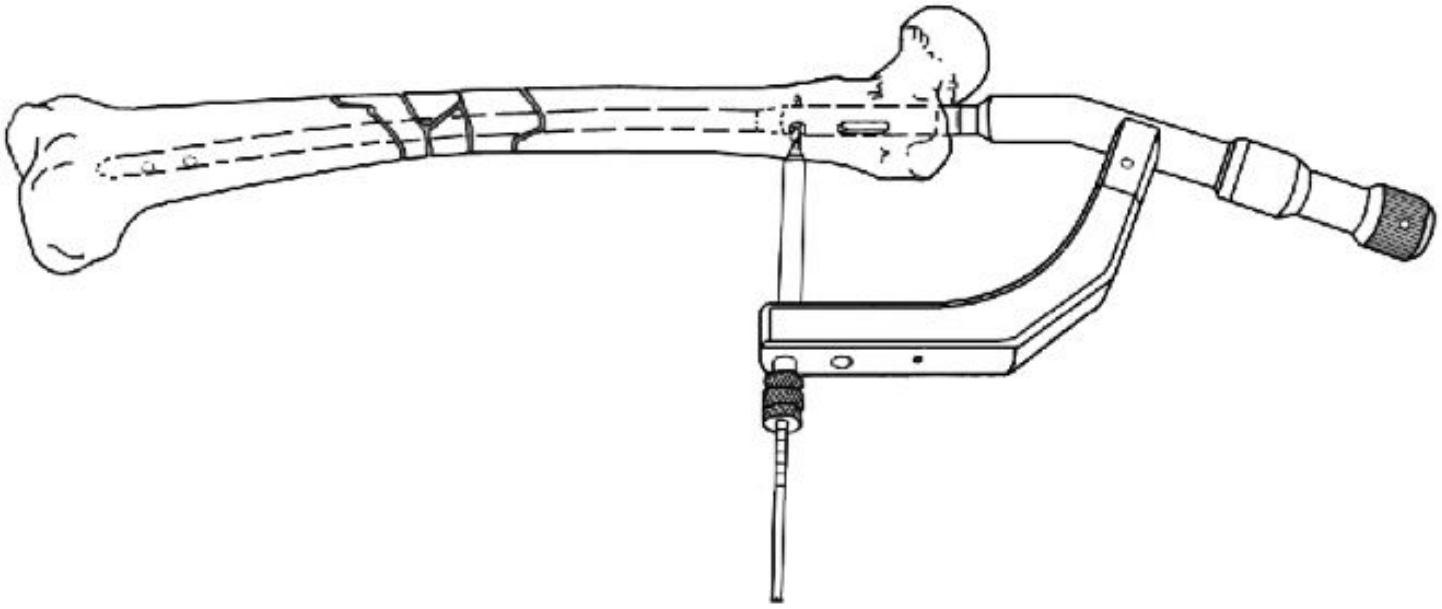


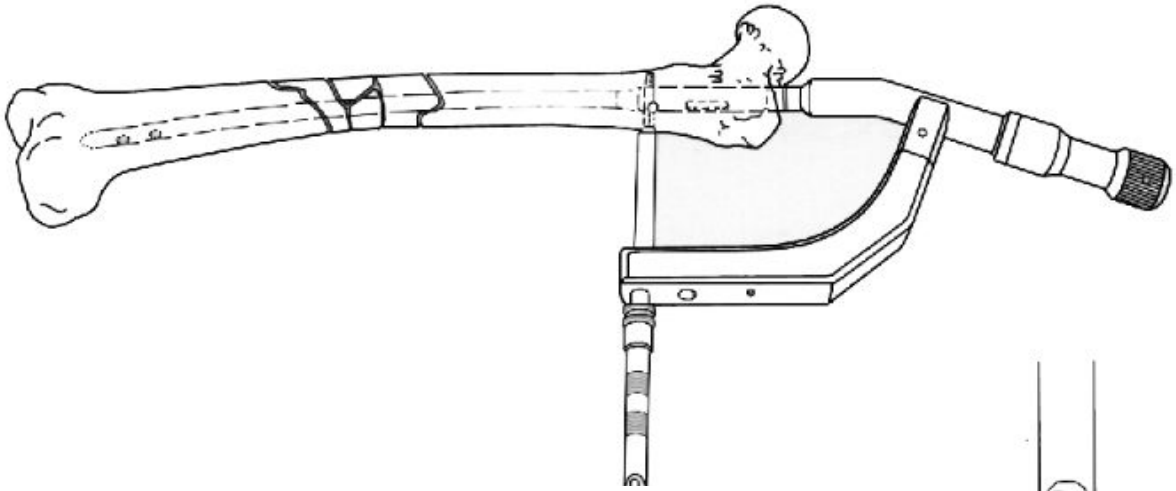


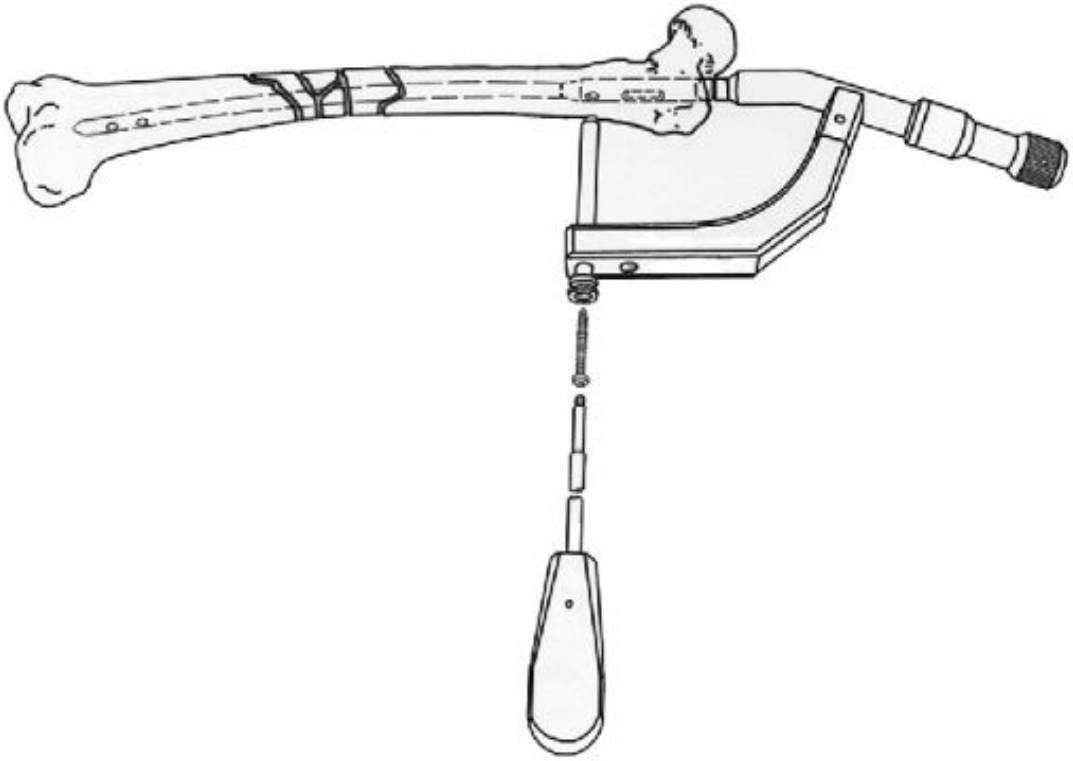

510.200

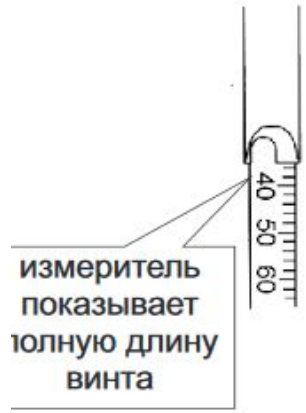


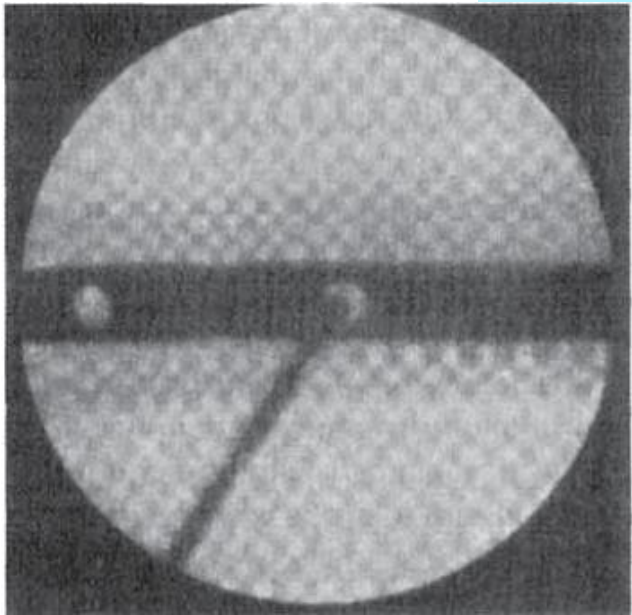




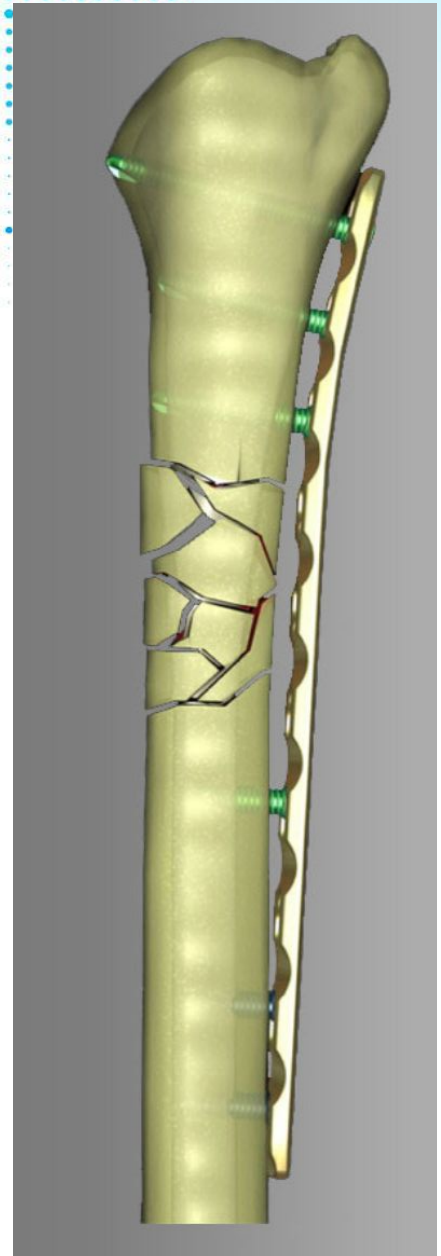




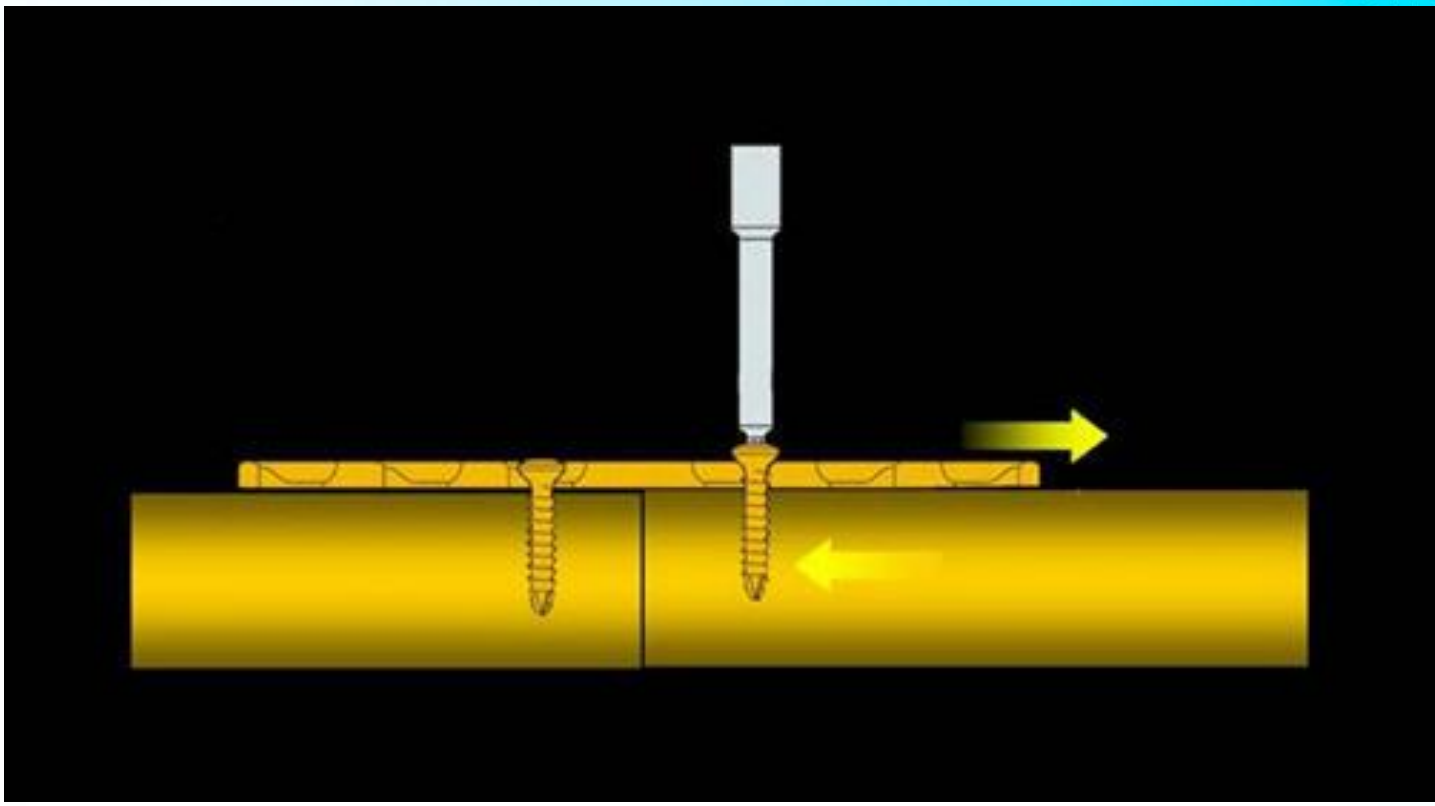

40 50 60
измеритель
показывает
олную длину
винта



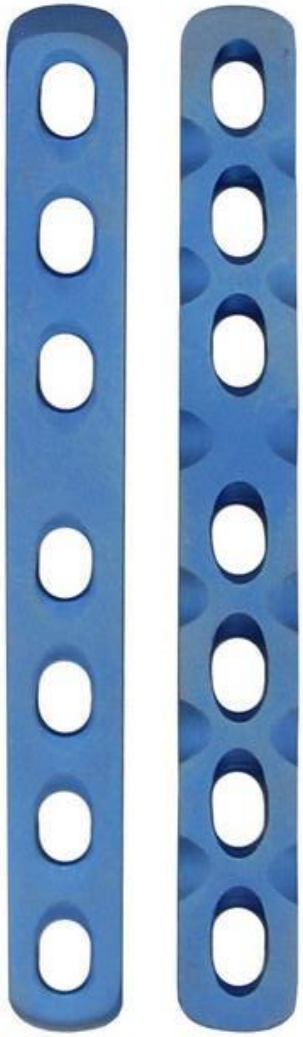
Накостный остеосинтез



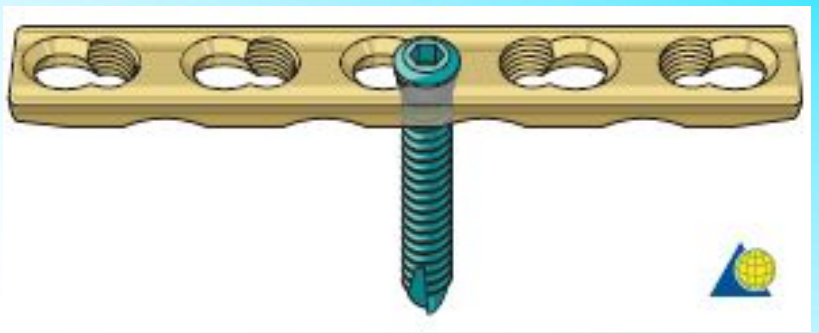
DCP – dynamic compression plate



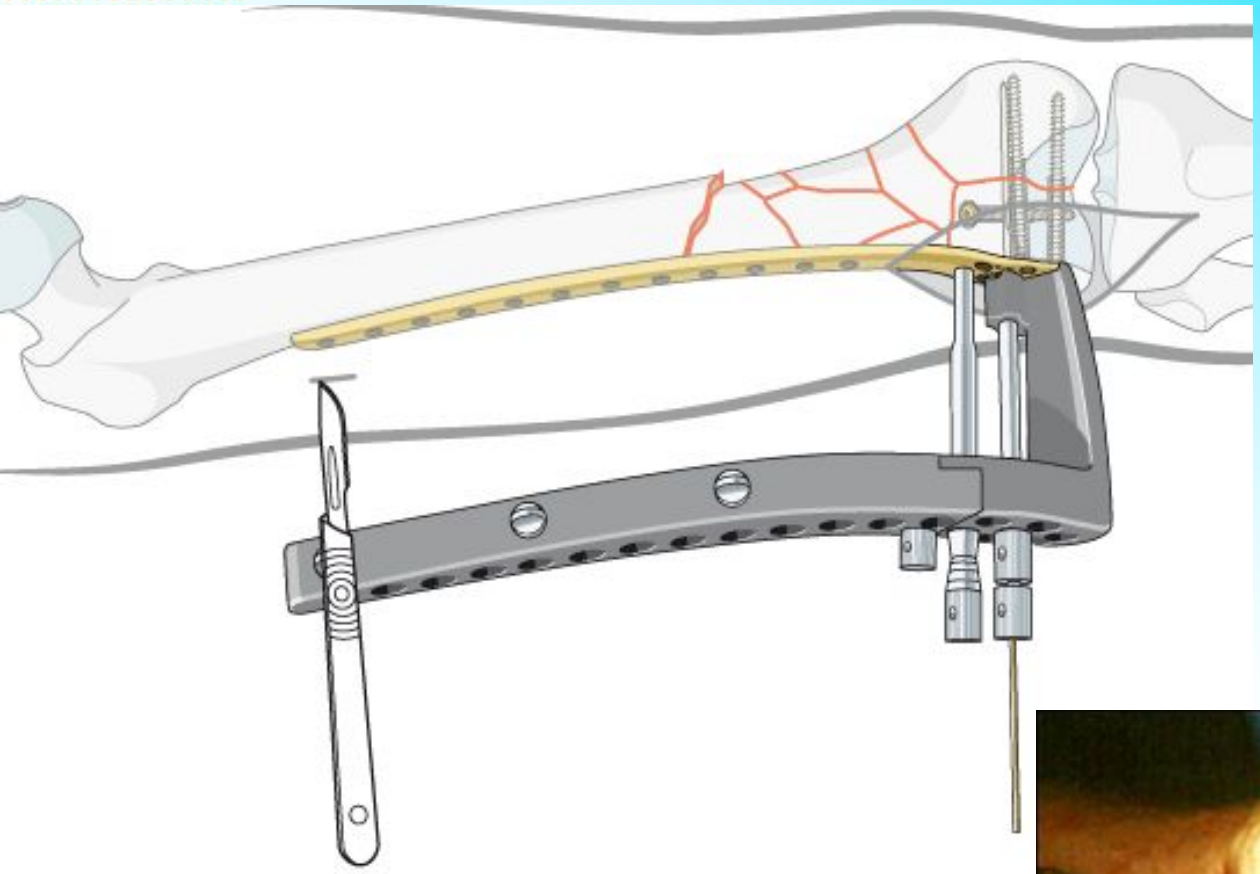
ynamic compression

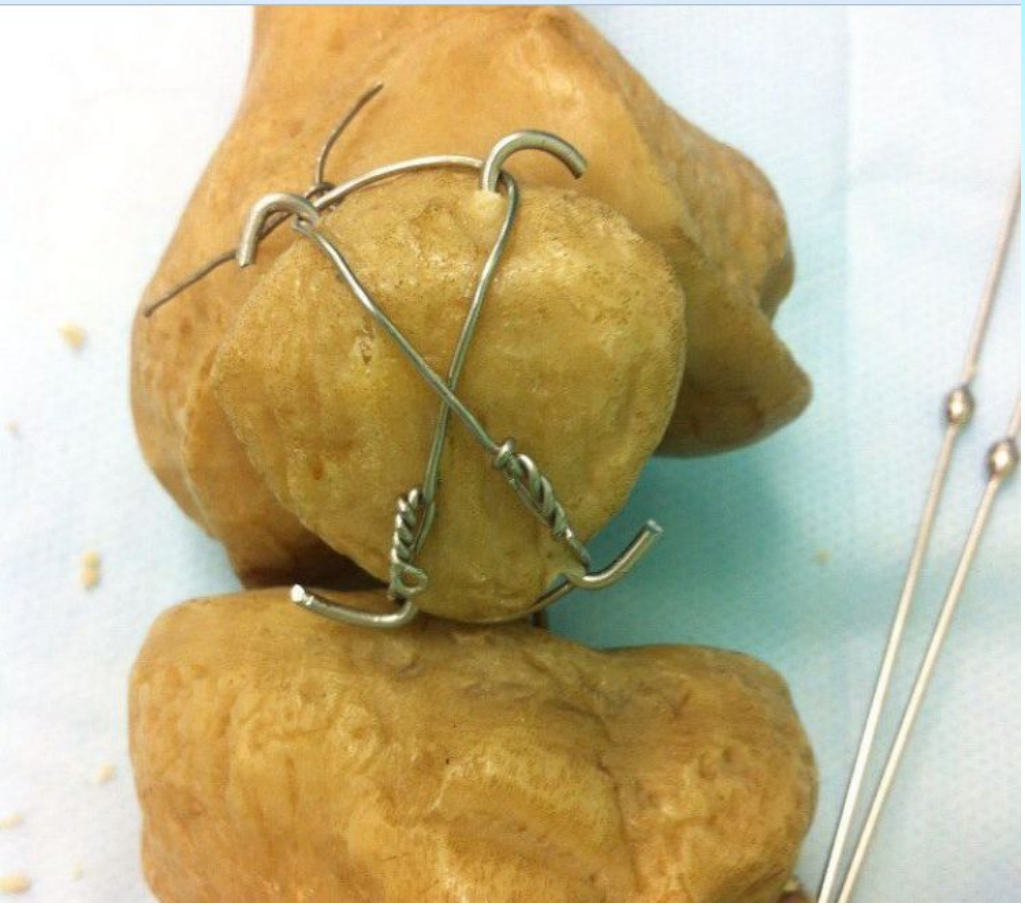


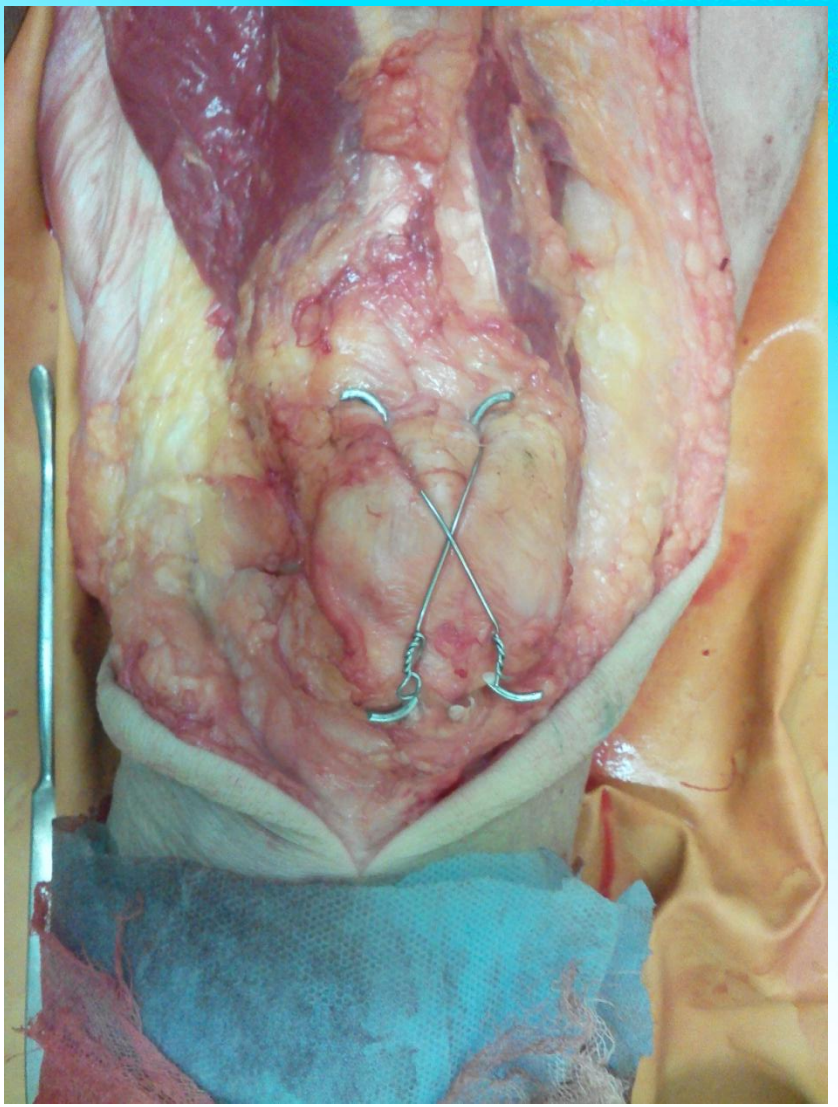
LCP – locking compression plate



LISS – less invasive stabilisalion system







AO Foundation

Android

AO Surgery Reference

AO Surgery Refe...

AO Surgery Reference

AO Foundation

3+

УДАЛИТЬ

ОТКРЫТЬ

Overview | Diagnosis

AO Surgery Reference | Authors

Please select an anatomical area

AO Foundation

- CMF
- Clavicle
- Scapula
- Spine
- Pelvic ring
- Acetabulum
- Proximal femur
- Femoral shaft
- Distal femur
- Patella
- Proximal tibia
- Tibial shaft
- Distal tibia
- Malleoli
- Foot
- Proximal humerus
- Humeral shaft
- Distal humerus
- Proximal forearm
- Forearm shaft
- Distal forearm
- Hand
- Pediatric

Overview | Diagnosis | Decision | Pr

Tibial shaft | Authors

Simple fractures

42-A1
Spiral

42-A2
Oblique (>30°)

42-A3
Transverse (<30°)

Wedge fractures

42-B1
Spiral wedge

42-B2
Bending wedge

Tibial shaft 42-A2 | Authors

Operative treatment

Casting

CREF: Closed reduction external fixation
External fixator (modular)

CREF: Closed reduction external fixation
External fixator (uniplanar)

CREF: Closed reduction external fixation
Ring fixator (Ilizarov)

CRIF: Closed reduction internal fixation
Nailing

CRIF: Closed reduction internal fixation
Nailing

CRIF: Closed reduction internal fixation
MIO - Compression plating

ORIF: Open reduction internal fixation
Lag screws with protection plate (screw through plate)

ORIF: Open reduction internal fixation
Lag screws with protection plate (screw outside plate)

ORIF: Open reduction internal fixation
Compression plate with lag screw

General considerations

Tibial shaft 42-A3

Closed reduction; intramedullary nailing

CRIF - Intramedullary nailing

Main indication: Any diaphyseal fracture with a normal medullary canal

Skill:

Equipment:

Indications

- Any tibial diaphyseal fracture with a normal medullary canal and sufficient length of end segments
- Need for surgical stabilization

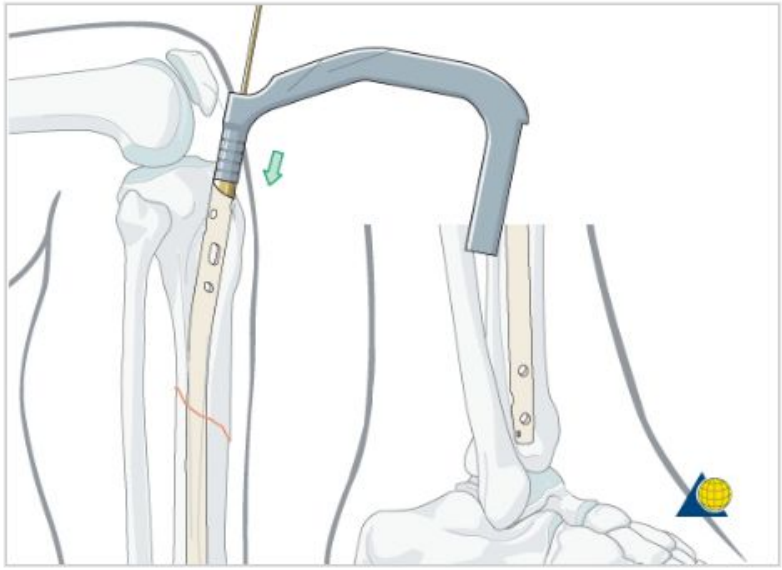
Contraindications

- Deformed medullary canal (old fracture; hardware)
- Risks of surgery and anesthesia exceed

1. Principles

Intramedullary nailing

Intramedullary fixation is valuable and appropriate for the majority of tibial fractures. It is well-suited for the mid diaphysis. With newer nail designs and attention to technique, nailing can be extended to both proximal and distal extraarticular fractures.



Спасибо за внимание!