# ORAL SURGERY

Preclinical dentistry III.

Lectures 1. – 2.

# ORAL AND MAFILOFACIOAL SURGERY.

Dental speciality that deals with diagnosis and surgical treatment of diseases, injuries and deformities of teeth and surroundung structures (oral surgery). Maxilofacial surgery is focused also on jaws and face.

# SURGICAL PROCEDURES

Incision

Extractions

- Single ectraction
- Multiple extractions
- Surgical extractions

Exposure of impacted tooth (e.g. Canine, third molar)

Periodontal surgery 

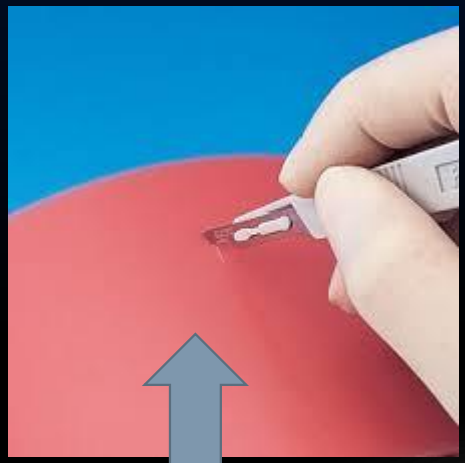
- Frenectomy
- Gingivectomy, gingivoplasty
- Osteoplasty

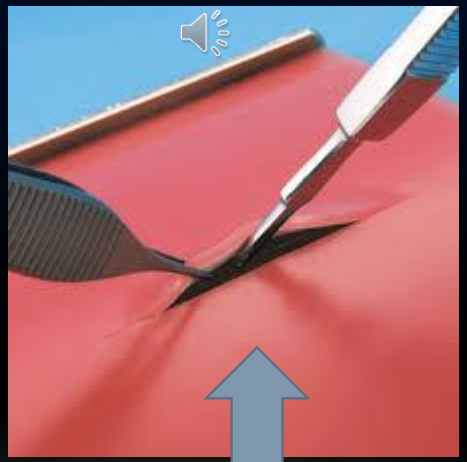
Biopsy

Implantation

Endodontic surgery

# INCISION
# SURGICAL KNIFE

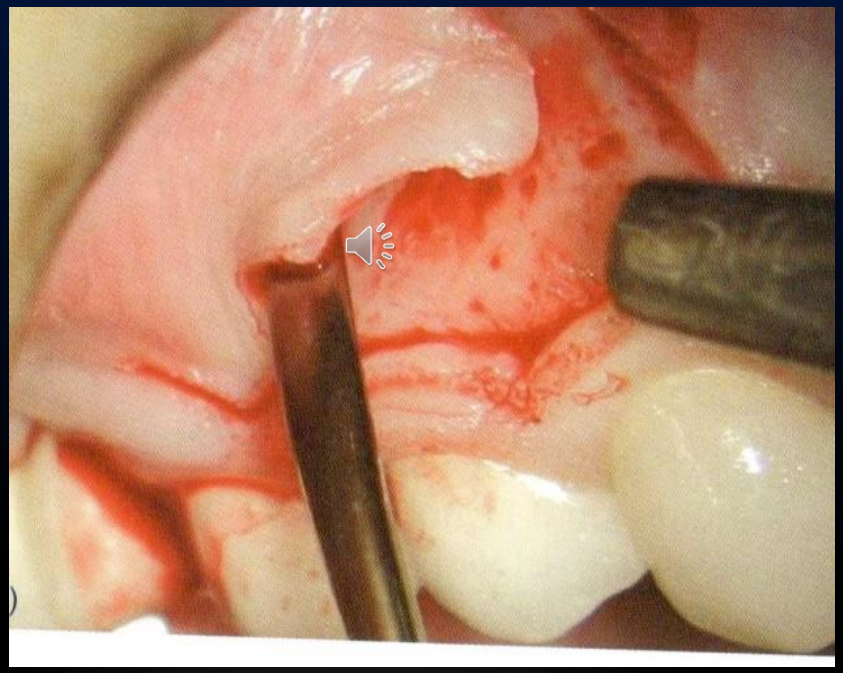




Incision – possibilities in periodontal sutgery

Example


# RAISING THE FLAP (MUCOSA AND PERIOSTEUM)



# CONTROL OF INFECTION

# SPECIAL TERMS IN RELATION TO CONTROL OF INFECTION

## Asepsis

All procedures that prevent contamination of the operating field:

Sterile gloves and clothes

Sterile instruments

Using antiseptics for decontamination the operative field before the surgical procedure.

# SPECIAL TERMS IN RELATION TO CONTROL OF INFECTION

## Antisepsis

Preventin of infection by inhibiting or arresting the growth and multiplication of germs (infectious agents) on skin or mucosa.

# ANTISEPTICS

- **Antiseptics** (from Greek *αντί* - *anti*, '"against" + *σηπτικός* - *septikos*, "putrefactive") are antimicrobial substances that are applied to living tissue/skin to reduce the possibility of infection, sepsis, or putrefaction

# SPECIAL TERMS IN RELATION TO CONTROL OF INFECTION

## Disinfection

is destruction od macroorganisms that are living on the objects. Desinfection does not necesarilly kill all microorganisms. We use various substances – disinfectants.

# DISINFECTANTS

- **Disinfectants** are substances that are applied to non-living objects to destroy microorganisms that are living on the objects. Disinfection does not necessarily kill all microorganisms, especially not resistant bacterial spores; it is less effective than *sterilisation*, which is an extreme physical and / or chemical process that kills all types of life. Disinfectants are different from other antimicrobial agents such as *antibiotics*, which destroy microorganisms within the body, and *antiseptics*, which destroy microorganisms on living tissue. Disinfectants are also different from biocides — the latter are intended to destroy all forms of life, not just microorganisms.

# SPECIAL TERMS IN RELATION TO CONTROL OF INFECTION

**Sterilization** (or **sterilisation**)

is a term referring to any process that eliminates (removes) or kills all forms of life, including transmissible agents (such as fungi, bacteria, viruses, spore forms, etc.) present on a surface, contained in a fluid, in medication, or in a compound such as biological culture media.

# STERILISATION

- **Sterilization** (or **sterilisation**) is a term referring to any process that eliminates (removes) or kills all forms of life, including transmissible agents (such as fungi, bacteria, viruses, spore forms, etc.) present on a surface, contained in a fluid, in medication, or in a compound such as biological culture media. Sterilization can be achieved by applying the proper combinations of heat, chemicals, irradiation, high pressure, and filtration.

# DRY HEAT STERILISATION

Sterilisation unit - sterilisator

- Hot air
- Circulation
- 160,170 or 180 °C

(60,30,20 min)

# HOT STEAM STERILISATION

Autoclave

Phases: vacuum –steam-air – drying.

Steam – pressure

Autoclaves commonly use steam heated to 121–134 °C (250–273 °F). To achieve sterility, a holding time of at least 15 minutes at 121 °C (250 °F) or 3 minutes at 134 °C (273 °F) is required.

# COLD STERILISATION

- Irradiation
- Special gas

No in dental surgery

# SCRUBBING

Aims and objectives:

Effectively reduce the number of microorganisms on the skin

By mechanical washing

# Microorganisms on skin

- Transient :-Introduced by soil, dirt, contamination
- Resident:- under finger nails, deeper layers of skin i.e. sweat gland, hair follicles & sweat glands

Scrubbing removes

-most of transient bacteria

-resident bacteria from surface & just beneath skin

# Preparation for scrubbing

- Personal Hygiene
- Shower
- Healthy skin on hands, fingers, nails & arms.
- No boil, abrasion or wound on hands
- Free from cold or URTI

# Finger Nails

- Short
- Not over tips of fingers
- Short nails
- Easy to clean
- Will not puncture gloves

Free from nail polish

Chipped nail polish can harbor bacteria

No artificial nails

# Jewelry

- Remove all jewelry i.e. rings, watches, bracelets from hands & arms
- Keep them at a sage place or in pocket

- Dead skin & accumulate beneath them

# Theatre Attire

- Scrub Suit
- Surgical Cap & face mask
- Eye Wear/Wiser
- Shoes
- Protective wearing
  - Plastic apron
  - Lead apron

# Scrub Suit

- Street clothes not allowed
- Short sleeved cotton scrub suit.
- Sleeves 4 inches above elbow
- Shirt tucked in trouser
- -to avoid  shirt tail flapping on sterile field
- Trouser legs not touching floor

- to avoid transport of bacteria

# Shoes

- Street shoes not allowed
- Close ended shoes
- Chappals or open ended shoes not allowed
- Shoe cover for single use only

# Surgical Cap & Face mask

- **Surgical cap cover hair completely**
- **Including pierced ear rings**
- **Face mask cover nose & mouth completely**

# FOOD/ DRINK

NO food or drinks in Patient Care Areas

Food/ Drinks must be consumed in Staff Lounges

# Scrubbing Agents

- Soap 5 minutes
- Povidone iodine solution 2minutes ( 8ml required)
- Chlor-hexidine Solution (Hibiclens) 2 minutes (8ml needed)

## Desirable properties of scrubbing agent

- Non irritating to skin
- Leaves minimum bacteria on skin
- Prolonged antibacterial effect on skin
- Should leather in hot, cold , or hard water

# Scrubbing Procedure

Nail brush for nails

Water Steady flow

Comfortable temperature.

Hands above the level of the elbows

Clothing should remain dry

Movements steady.

# Scrub technique

- **Scrubbing do not include rinsing time**
- **Set water temperature**
- **Wet hands & forearms**
- **Hold soap in hands till scrubbing complete**
- **Keep hands elevated above elbow through out**

# Scrubbing Procedure

- Turn off taps with elbows
- keep hands elevated.
- skin should be blotted dry
- Use 2 towels
- Towel should be folded
- Discard towel immediately

# Gowning Procedure

- Pick up gown from opened pack
- gown is folded with the inside uppermost.
- Slide both arms into gown
- Not to touch outside the gown.
- All gowns must be in a good state

# PARAMETERS OF A STERILE GOWN

- **GOWNS ARE CONSIDERED STERILE FROM WAIST LEVEL TO CHEST LEVEL INCLUDING SLEEVES TO 2’ ABOVE ELBOW**
- **STOCKINETTE CUFFS MUST BE COVERED BY STERILE GLOVES**
- **STERILE PERSONS MUST HAVE HANDS IN SIGHT AT ALL TIMES**

# Gloving Procedure

- **The Open Method**
- **Closed Method**

- Once gowned and gloved
- stand with hand palms together
- Above the waist
- Away from the gown

# At the end of the sterile procedure

- **First remove the gown over the gloved hands**
- **Then the gloves.**
- **Hands should then be washed and dried.**
- **Gloves disposed of according to policy**

# THE PREPARATION OF OPERATOR AND OPERATING FIELD WILL EXPLAINED AND TRAINED PRACTICALLY FROM 3RD YEAR

This is the endo of the first lecture.

# ANAESTHESIA

# ANAESTHESIA

Dentist is responsible for providing the patient with comfortable dental treatment !

# PAIN

Sensory and emotional experience associated with actual or potentional tissue damage.

# PAIN AND ANAESTHESIA

Pain occurs when pain receptors or nerve endings transmit impulses to the central nervous system.

Anaesthesia eliminates the pain experience by interrupting the transmitted impulse.

# ANAESTHESIA

- Absence of normal sensation, esp sensitivity to pain.

# PAIN CONTROL - INDICATIONS OF ANAESTHESIA

- Surgical treatment
- Preparation of cavities
- Preparation for crowns
- Endodontic treatment
- Peridontal treatment (scaling, periodontal surgery)

# CLASSIFICATION

- General anaesthesia
- Analgesia (inhalation, sedation)
- Hypnosis
- Local anaesthesia

# ANAESTHESIA

Conscious sedation: an anaesthetic agent used to produce a sedative effect while patient remains conscious. (Sometimes inhalation)

General anaesthesia: an anaesthetic agent creates a state od unconsciouness with absence of sensation of entire body.

# LOCAL ANAESTHESIA

- Topical (spray,liquid) applied on mucosa
- By injection

- Infiltration
- Nerve block
- PDL –periodontal ligament anaesthesia
- Intrapulpal anaesthesia

# PAIN CONTROL - INDICATIONS OF ANAESTHESIA

- Surgical treatment
- Preparation of cavities
- Preparation for crowns
- Endodontic treatment
- Peridontal treatment (scaling, periodontal surgery)

# LOCAL ANAESTHESIA CONTRAINDICATIONS

- Allergy
- Serious systemic diseases (blood circulation)
- Antithrombotic therapy , coagulopathy – nerve blocked anaesthesia

# DRUGS

- Articain 4% with epinephrine 1: 200 000
- Articain 4% with epinephrin 1:100 000
- Mepivacain 3%plain
- Prilocaine 4% with epinephrine 1:200 000
- Prilocaine plain
- Lidocain spray 10%
- Xylocain spray 10%

# BENEFITS OF LOCAL ANAESTHESIA

- Comfort for the patient
- Haemostasis (addtion of epinephrin – hormone of suprarenal gland – arteficial)
- Operator efficiency

# TOPICAL ANAESTHESIA (ON MUCOSA OR SKIN)

- Liquid
- Spray
- Creme, paste

Only nerve endings are affected

For extraction of primary teth (when roots are completely resorbed)

Anesethesia of the puncture will be

# INFILTRATION ANAESTHESIA

- The drug is delivered by infiltration of soft tissues using syringe and needle.

Nerve branches in tissues are affected.

# INFILTRATION ANAESTHESIA

- Suitable for - indications

- simple extractions in  maxilla,
- extractions of mandibular incisors, canines
- soft tissue surgery

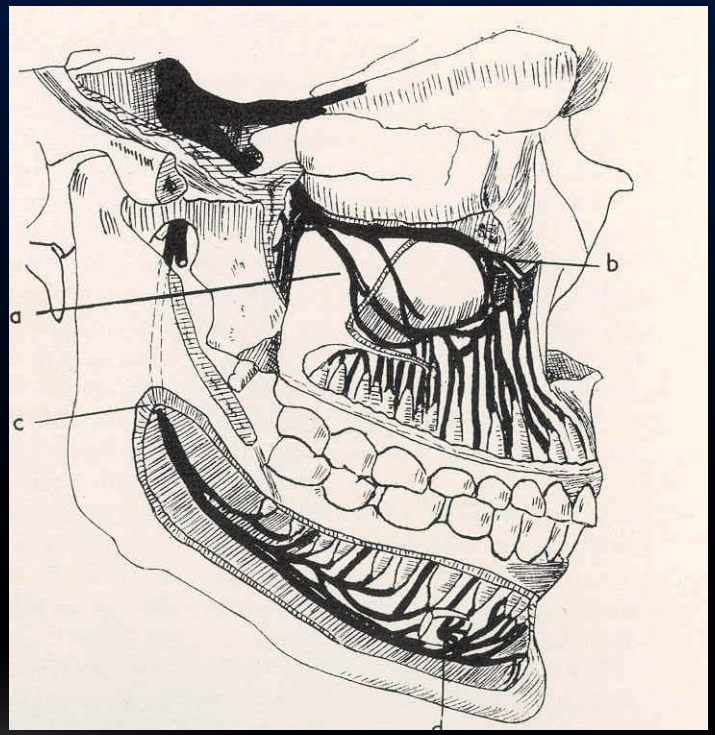
# INFILTRATION

- Syringe with short needle
- Raise lip or cheek The puncture is situated into mucosa appr. 1cm from fornix vestibuli. Do not touch  periosteum.

# NERVE BLOCK ANAESTHESIA

Syringe with long needle

- Foramen mandibulare
- Foramen mentale
- Foramen palatinum majus
- Foramen incisivum
- Foramen infraorbitale

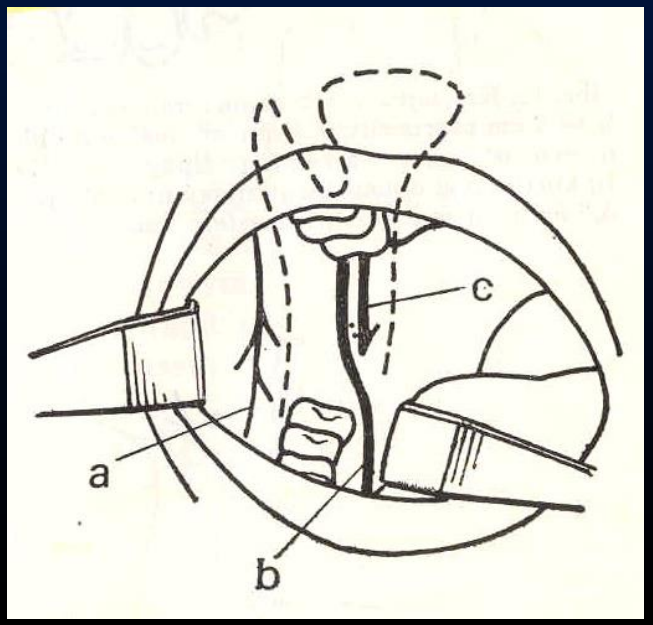


# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior

## Foramen mandibulare

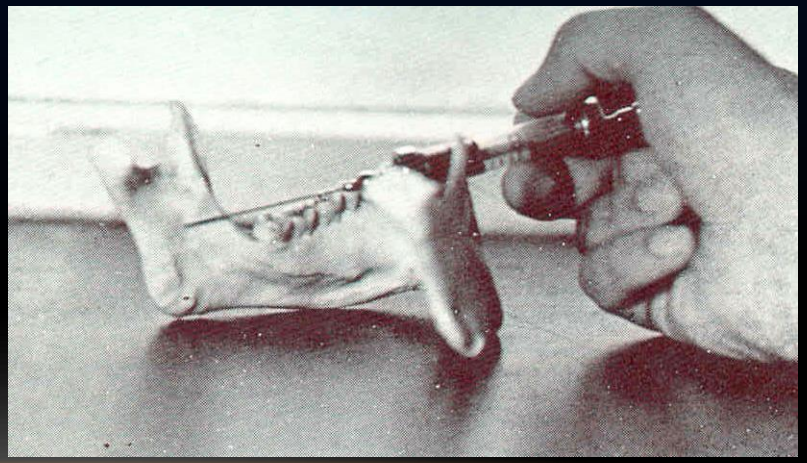
**N. Alveolaris inferior**
**N. lingualis**



# NERVE BLOCK ANAESTHESIA

Nervus alveolaris inferior

In sulcus colli mandibulae

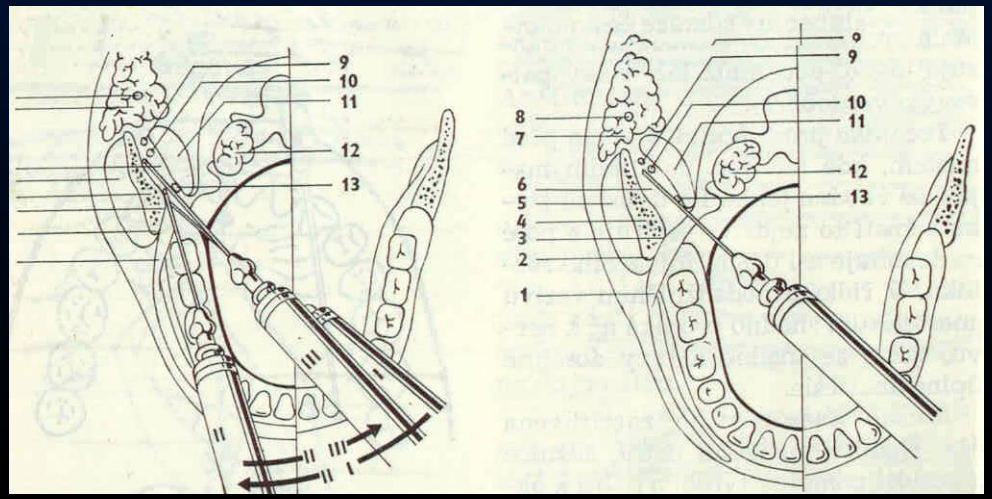


# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior

Indirect

Direct



# NERVE BLOCK ANAESTHESIA

N. alveolaris inferior

## Indirect

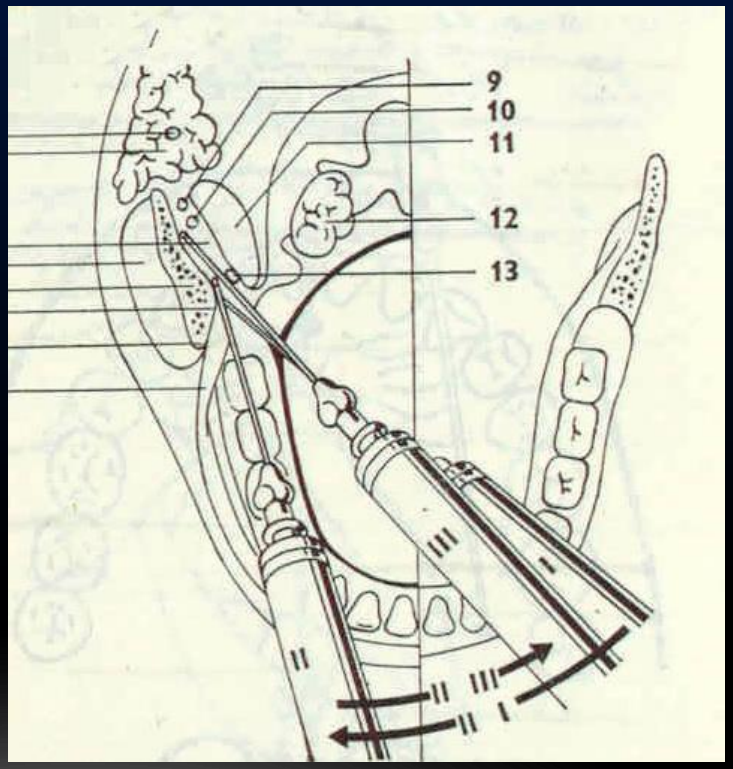
Put the forefinger

on the occlusal surface

Rotate inside  (nail inside)

1 cm up occlusal surface

the puncture is situated



# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior

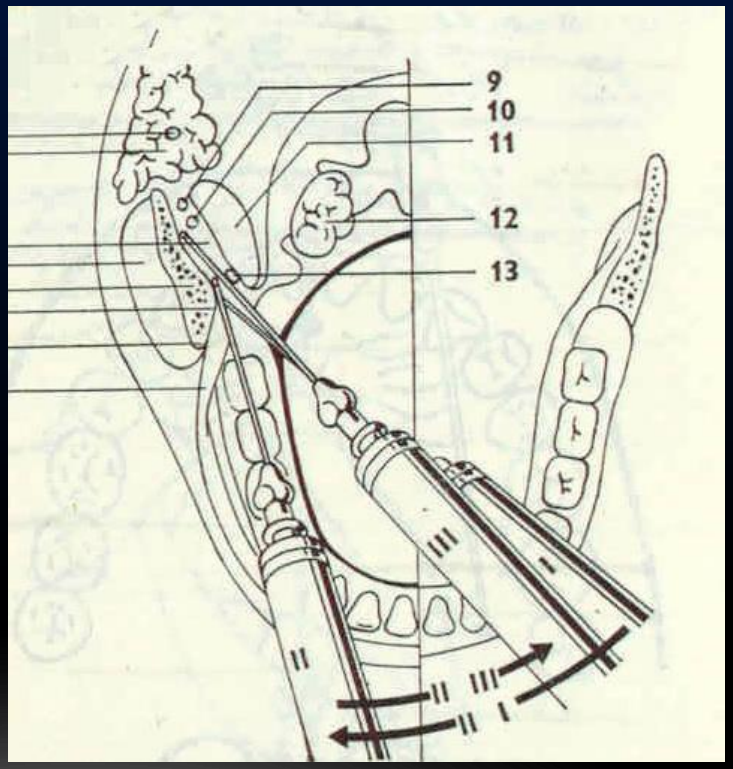
## Indirect

1. The syringe

on the opposite canine

The needle goes behind

the crista temporalis,



# NERVE BLOCK ANAESTHESIA

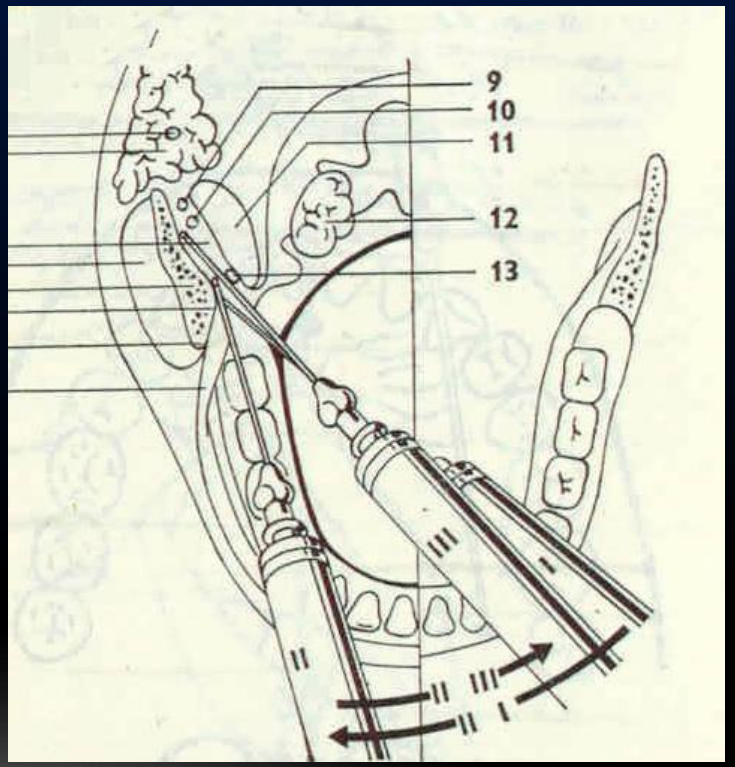
## N. alveolaris inferior

### Indirect

2. The needle goes deeper

in the contact with the bone

The syringe goes mesial

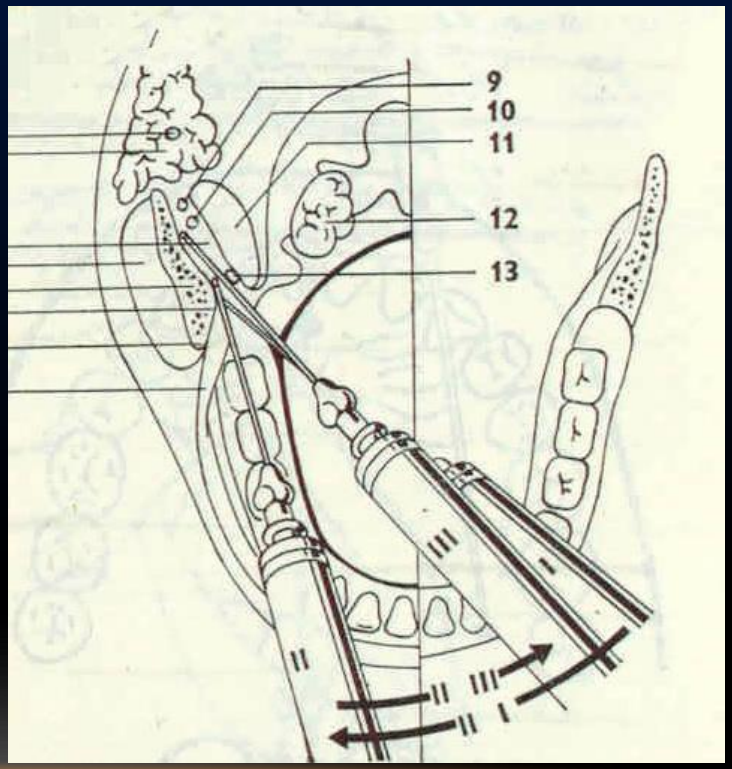


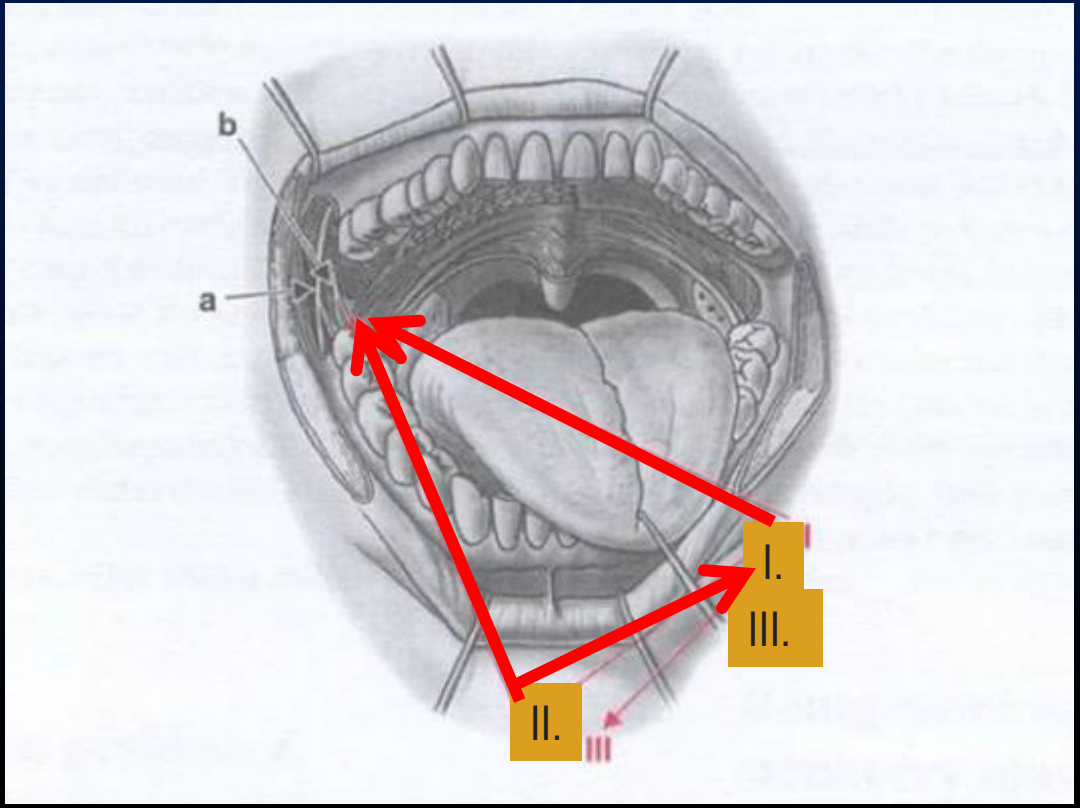
# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior

## Indirect

3. The contact with bone is lost, the syringe goes back Aspiration and a injection of the drug.




b
a
I.
III.
II.

# DIRECT METHOD

The beginning is the same

Put the forefinger

on the occlusal surface

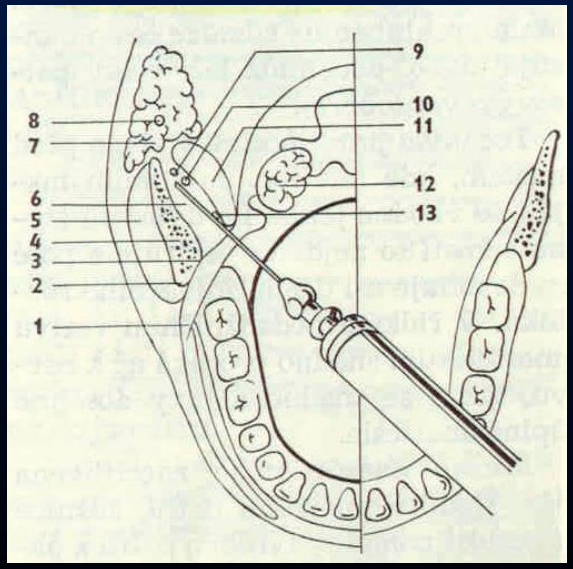
Rotate inside  (nail inside)

1 cm up occlusal surface

the puncture is situated

# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior




Direct

- The puncture see previous slide
- The syringe on opposite premolars
- The puncture is situated

  medially from crista temporalis

  and laterally from plica prerygomandibularis (into a small depression in mucosa)

1,5 cm deep

# NERVE BLOCK ANAESTHESIA

## N. alveolaris inferior

Anaesthetic zone

Molars, premolars, mucosa, skin, bone, tongue

# NERVE BLOCK ANAESTHESIA

F. mentale

The puncture is situated behind

the distal surface of 2nd premolar

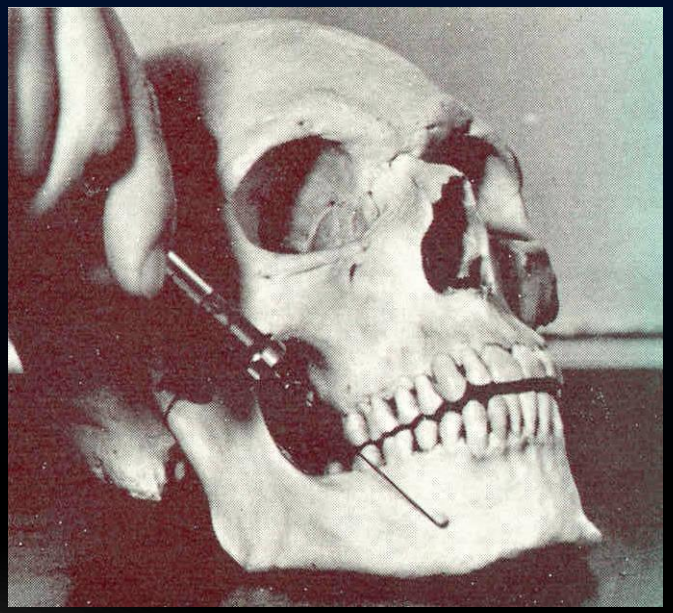
The needle goes between

roots of premolars from up to down,

Forward and mesially

Anaesthetic zone: Premolars and canine,

mucosa, skin.



# NERVE BLOCK ANAESTHESIA

Foramen palatinum majus – nervus palatinus major

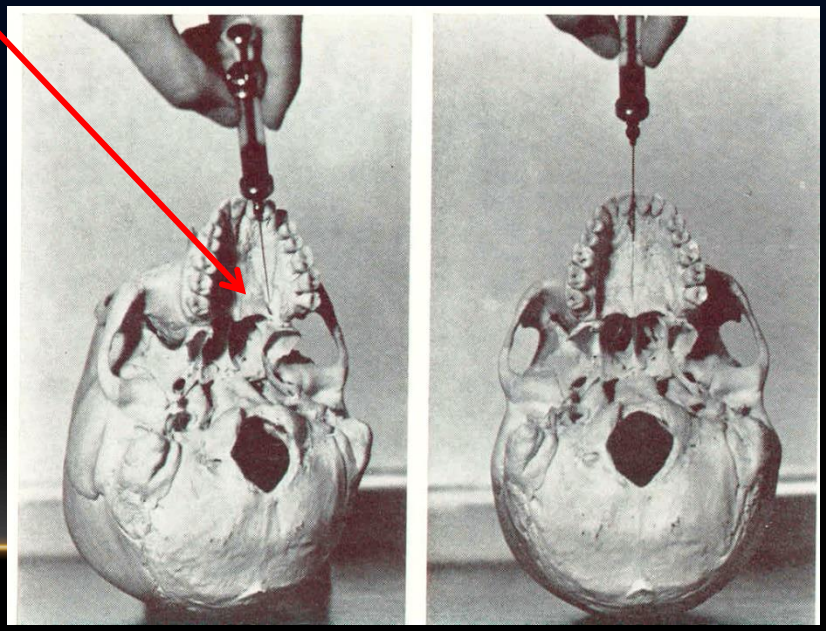
Distal surface of second molar

The puncture is

0,5 – 1 cm before

from behind forward

Anaesthetic zone: Half of palate



# NERVE BLOCK AESTHESIA

## Foramen incisivum – n. nasopalatinus

Nervus incisivus

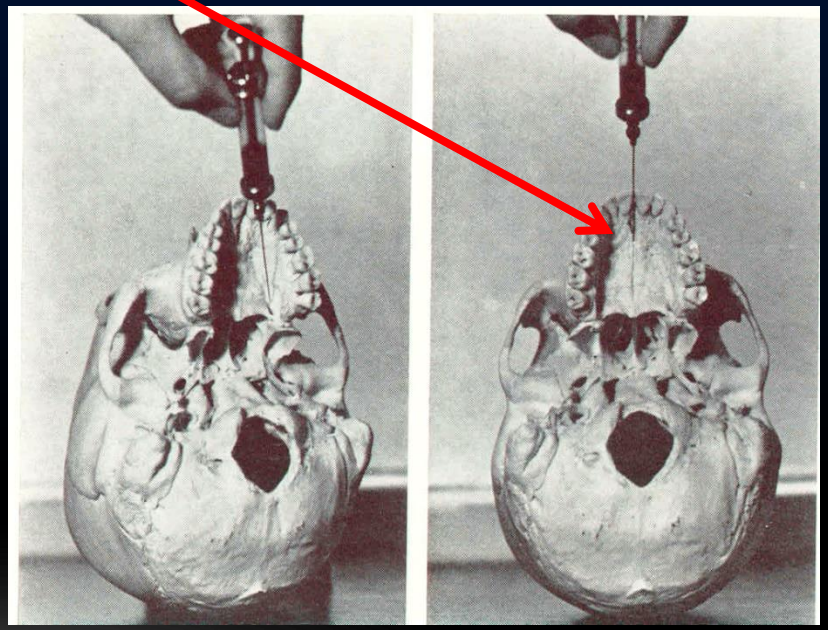
Papilla incisiva

Next tu papilla,

mesial direction

*Triangular area*

*behind incisors*



# ANAESTHESIA ON F. INFRAORBITALE

- Find the margo infraorbitalis
- Raise the lip
- The puncture is situated between canine and 1st premolar
- The needle goes to the region (appr 1 cm below margo infraorbitalis)

Anaesthetic zone: Canine and premolars

# ANAESTHESIA ON TUBER MAXILLAE

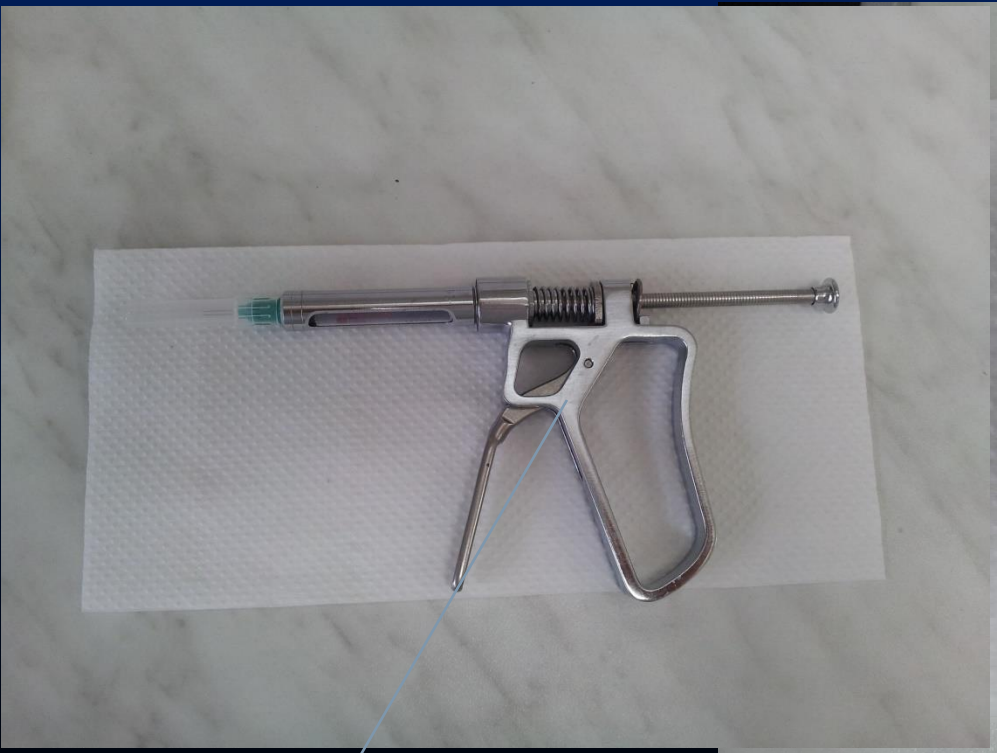
- The durg si delivered on tuber maxillae

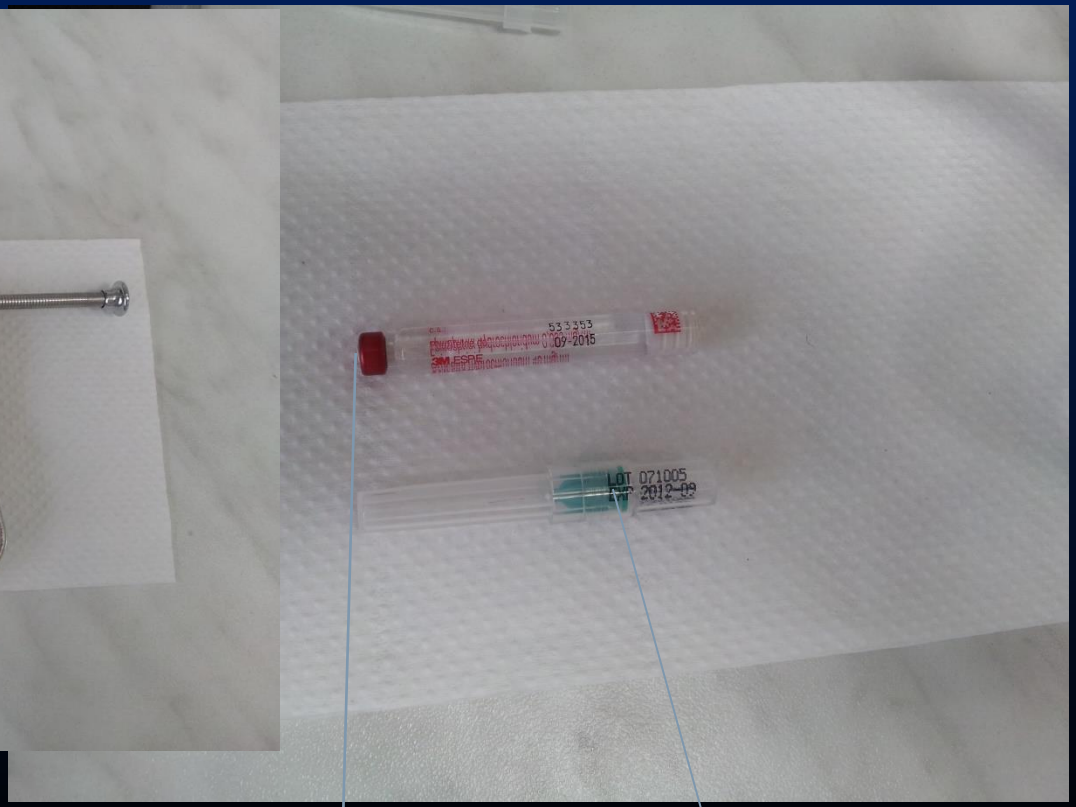
- The puncture is situated behind 2nd molar (distal surface), goes behind and upper around tuber maxillae.

Anaesthetic zone: Upper molars

# PDL ANAESTHESIA

- Intraligamentary
- Special syringe (pen or gun) The needle is inserted into periodontal space – few drops on anaesthetic
- Indication: single extraction, preparation, pulp exstirpation






Special gun

Anaesthetic

Needle

The  puncture is between gingiva and tooth and goes into gingival sulcus
MB, ML, DB, DL

# INTRAPULPAL ANAESTHESIA

- Exstirpation of the pulp – additional step.

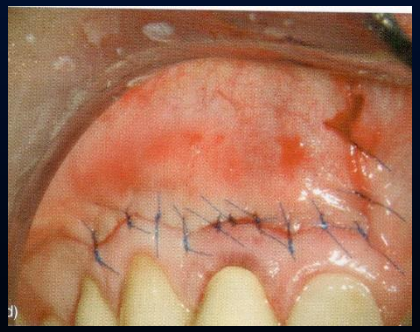
Directly into the pulp chamber

# ANAESTHESIA - COMPLICATIONS

- Bleeding
- Breakage of needle
- Heamatoma
- Allergy (swelling, collaps)

- *Patient´s history is necessary!!!!*

# ADAPTATION OF THE FLAP, SUTURE



# SUTURE

# SUTURE

Instruments:

Needles: bent

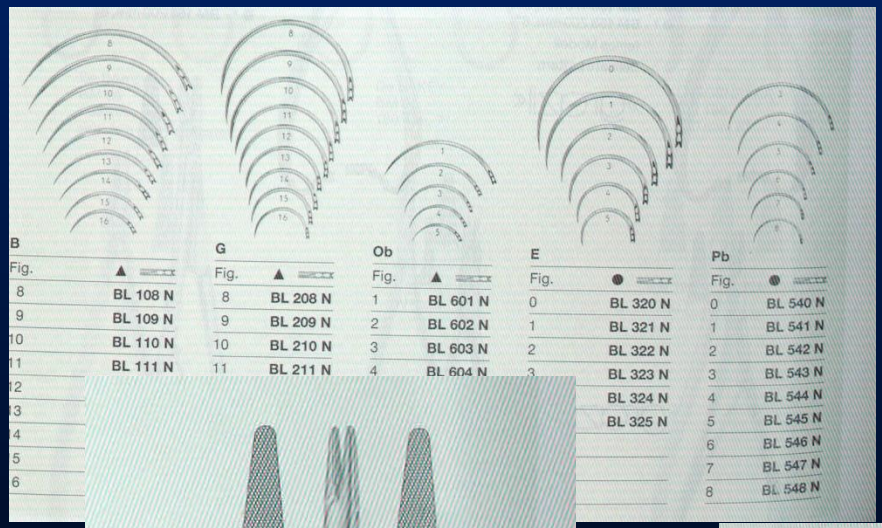
Straight

Various size

Needleholder:

Without fixation

Autofix



| B | | G | | Ob | | E | | Pb | |
|---|---|---|---|---|---|---|---|---|---|
| Fig. | ▲ | Fig. | ▲ | Fig. | ▲ | Fig. | ● | Fig. | ● |
| 8 | BL 108 N | 8 | BL 208 N | 1 | BL 601 N | 0 | BL 320 N | 0 | BL 540 N |
| 9 | BL 109 N | 9 | BL 209 N | 2 | BL 602 N | 1 | BL 321 N | 1 | BL 541 N |
| 10 | BL 110 N | 10 | BL 210 N | 3 | BL 603 N | 2 | BL 322 N | 2 | BL 542 N |
| 11 | BL 111 N | 11 | BL 211 N | 4 | BL 604 N | 3 | BL 323 N | 3 | BL 543 N |
| 12 | | | | | | | BL 324 N | 4 | BL 544 N |
| 13 | | | | | | | BL 325 N | 5 | BL 545 N |
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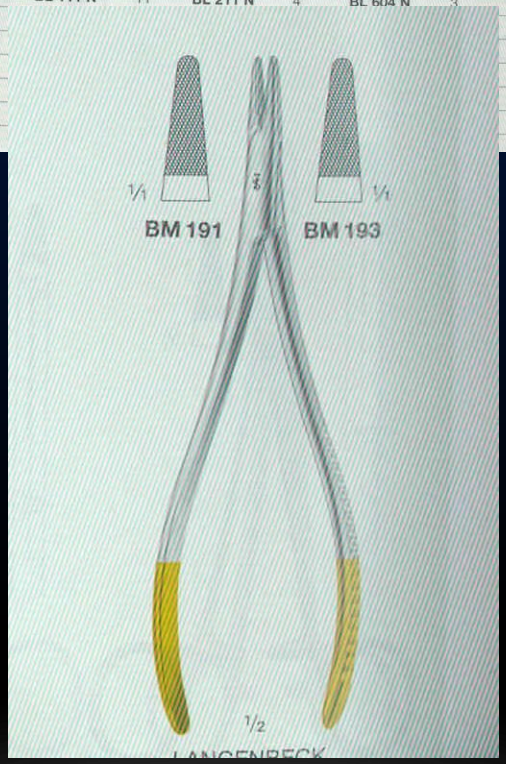
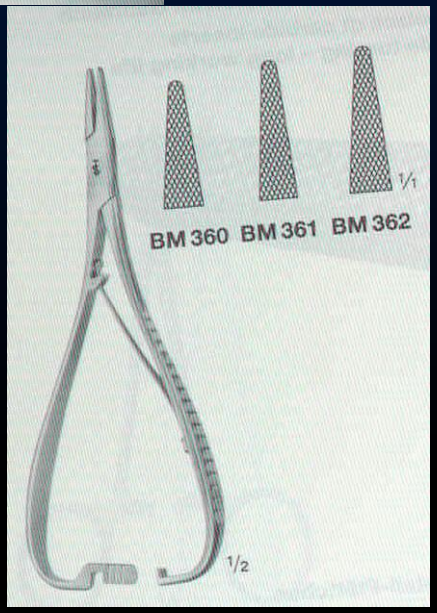
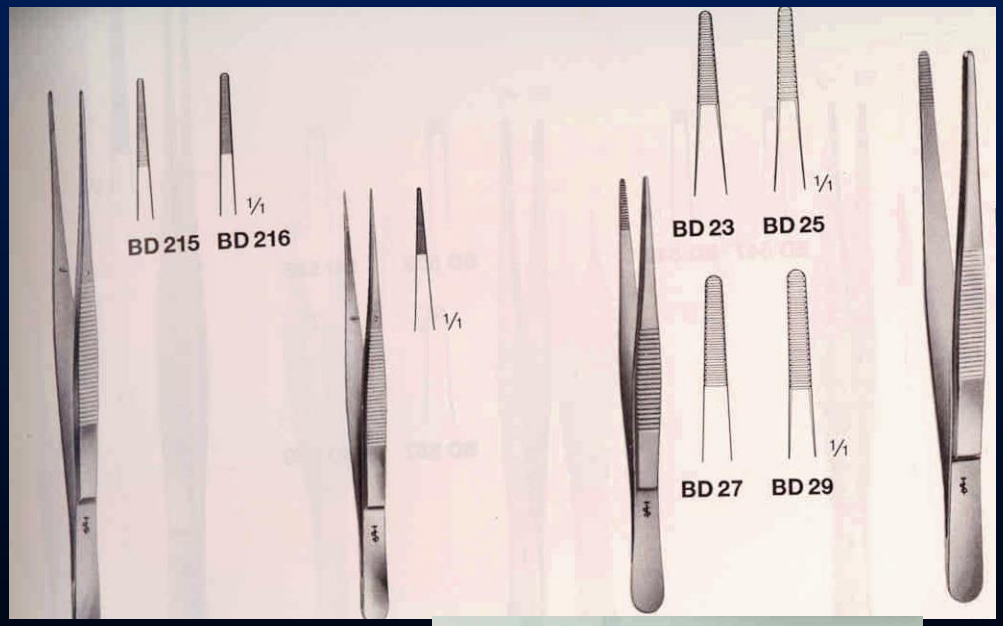
| 15 | | | | | | | | 7 | BL 547 N |
| 16 | | | | | | | | 8 | BL 548 N |

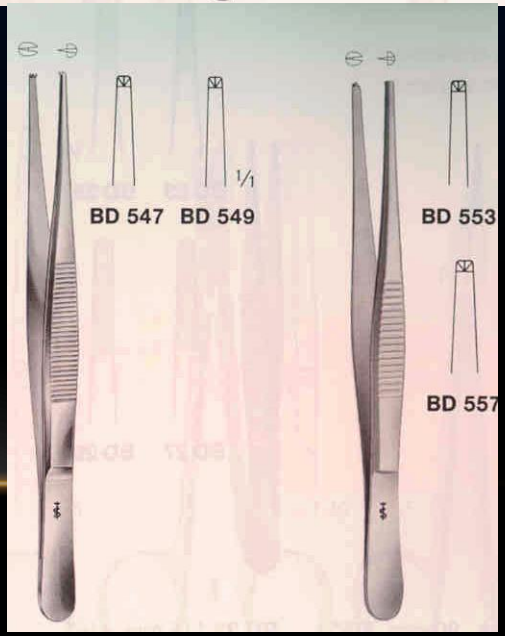


# SUTURE




Tweezers – tissue forceps



# SUTURE

Suture material

Resosbable,

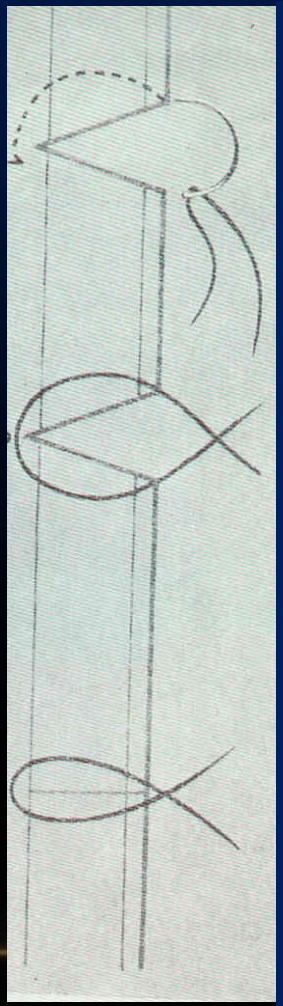
Polyglycol, polyglactin, polydioxynon

Non resorbable

Silk,nylon, PTFE, Polyester,polyamid.

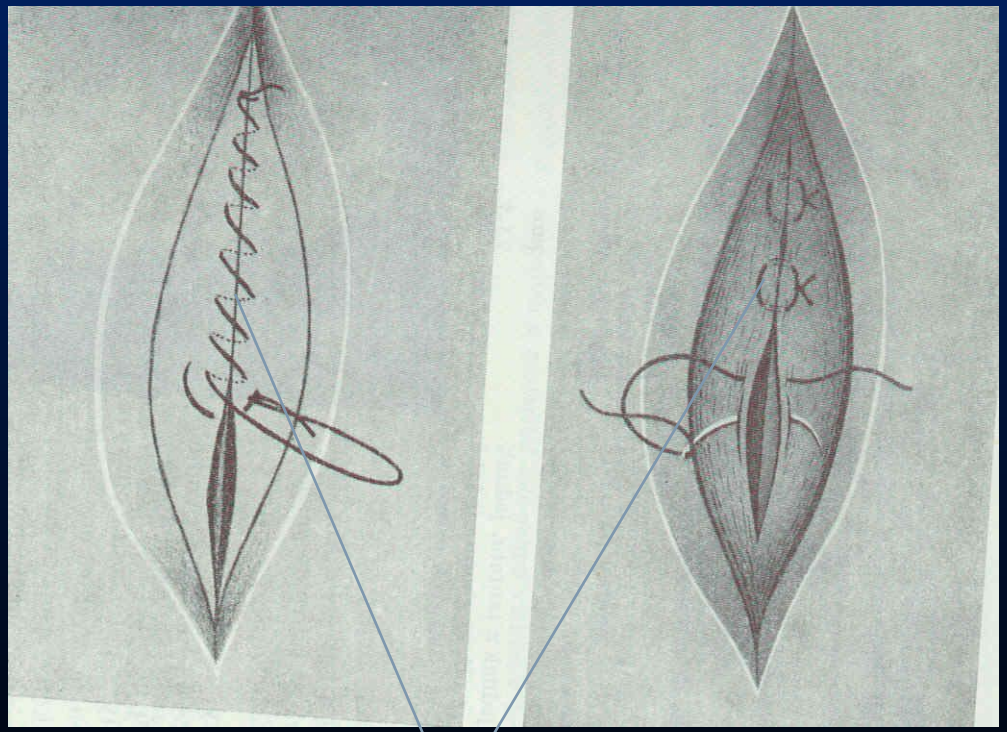
Monofil, polyfil

# SINGLE SUTURE



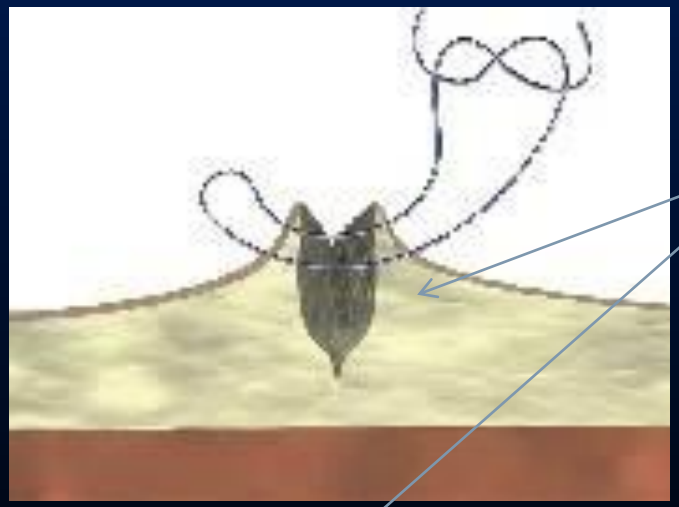
The puncture is situated appr. 2 mm from the border of the wound
The same on the opposite site.

The knot is out of the wound



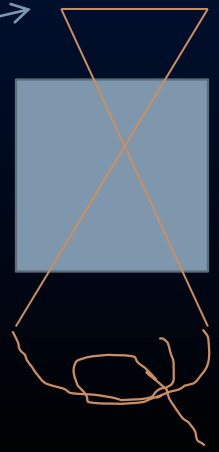
Single suture
Coninuing suture

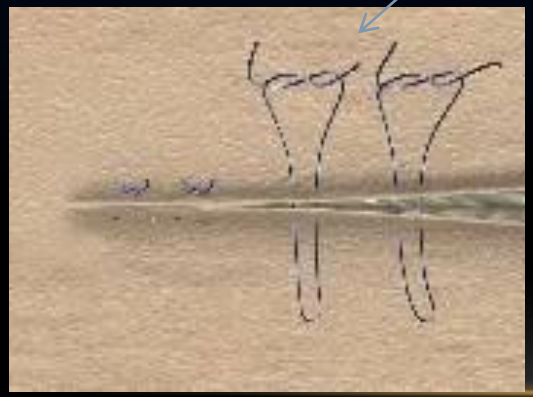
# WIDE WOUND – THE BORDERS ARE BROUGHT CLOSER

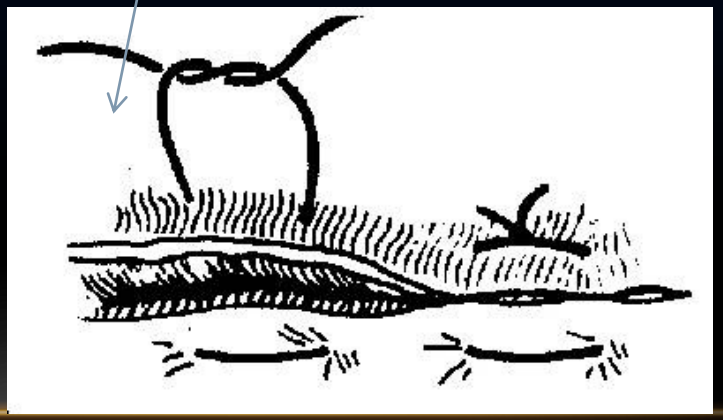


Mattress suture

Cross mattress suture







For the exam:

Students will be asked for preformance of:

Single suture

Matress suture

Here is also a link on you tube:

https://www.youtube.com/playlist?reload=9&list=PLWXXOUqxJ_VP8lxhFP7jJbXVSdXDi0iaC

This is an end of second lecture.