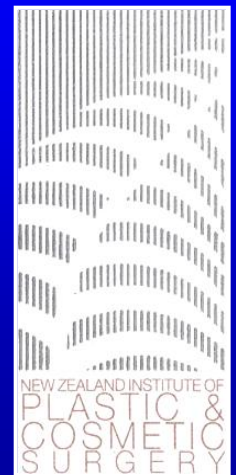


Advanced Skin Surgery Workshop for GPs

Rotorua - June 19, 2008

Stephen Gilbert FRCS, FRACS
Plastic and Reconstructive Surgeon

New Zealand Institute of Plastic
and Cosmetic Surgery
243 Remuera Rd,
Remuera



Should GPs be doing skin surgery?

Yes, if competent

Middlemore Plastic Surgical clinic
overloaded with simple lesions

Scope for the occasional GP surgeon:

- All lesions treatable by simple excision and direct closure - excluding the face.

Scope for the talented GP surgeon:

- All of the above, plus lesions requiring simple flaps or small skin grafts - away from the eyes.

Programme for Advanced Skin Surgery Workshop

- 1: Introduction to Plastic Surgery & overview of closure techniques
- 2: Video: Plastic surgical mole excision & direct closure
- 3: The difference between a flap & a graft
- 4: Orientating the elliptical excision
- 5: Local flaps
 - 1) *Rotation* - *practise*
 - 2) *Transposition* - *Rhomboid, video - practise*
- *Z-plasty - practise*
 - 3) *Advancement* - *V/Y-plasty - practise*
- 6: Grafts: Split-thickness, full thickness - *practise?*

A good result depends on precise technique

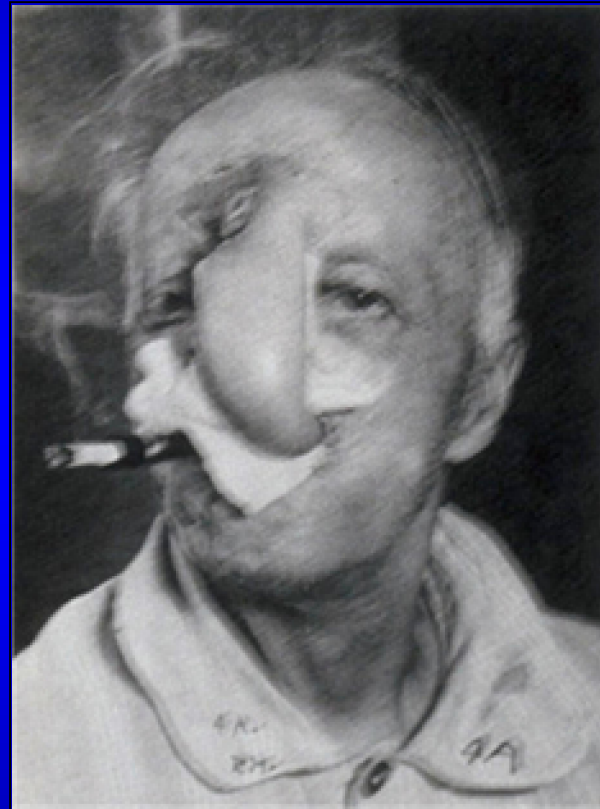
Plastic surgery is tissue craft; gentle rearranging and handling of tissues

Sir Harold Gillies



Etiquette: *“offer a cigarette at the first consultation”*

HDG

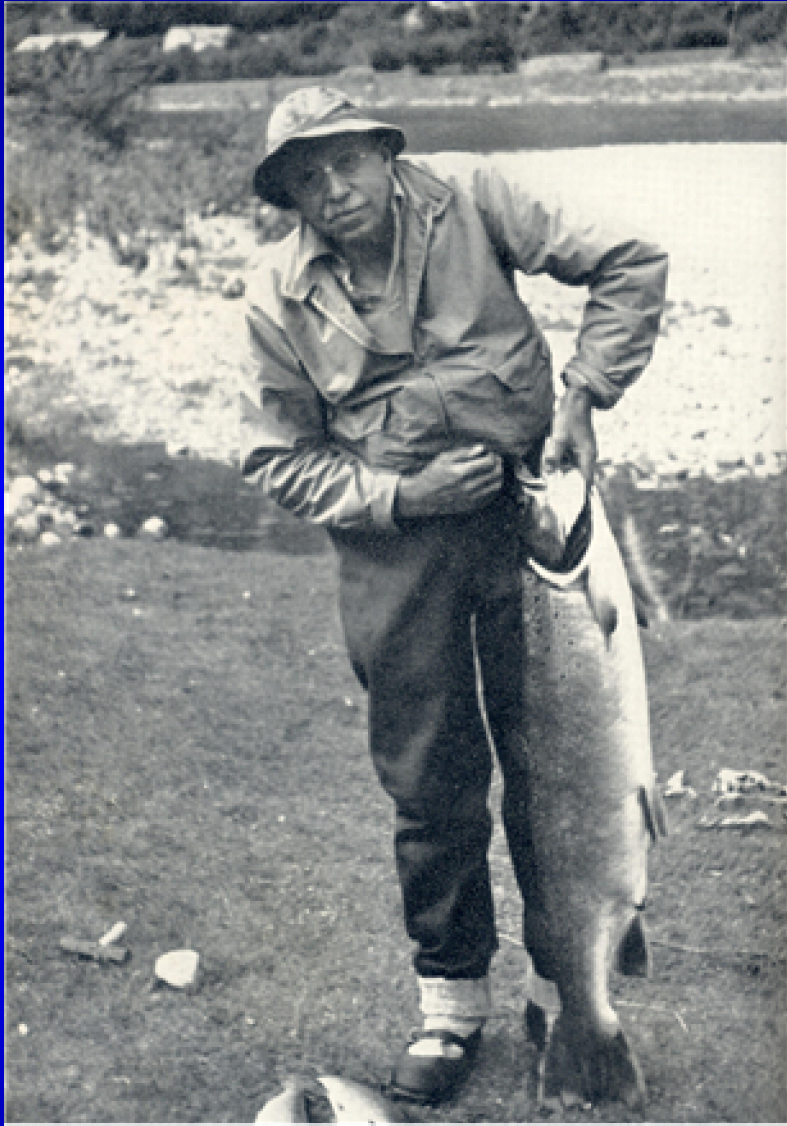






A BREWER'S DRAY AS
A CADDIE.

Tom Neenan
29.



Fisherman



Artist

Sir Archibald McIndoe



National Portrait Gallery



Vice President, Royal College of Surgeons of England



*The Guinea Pig Club East
Grinstead, Sussex*

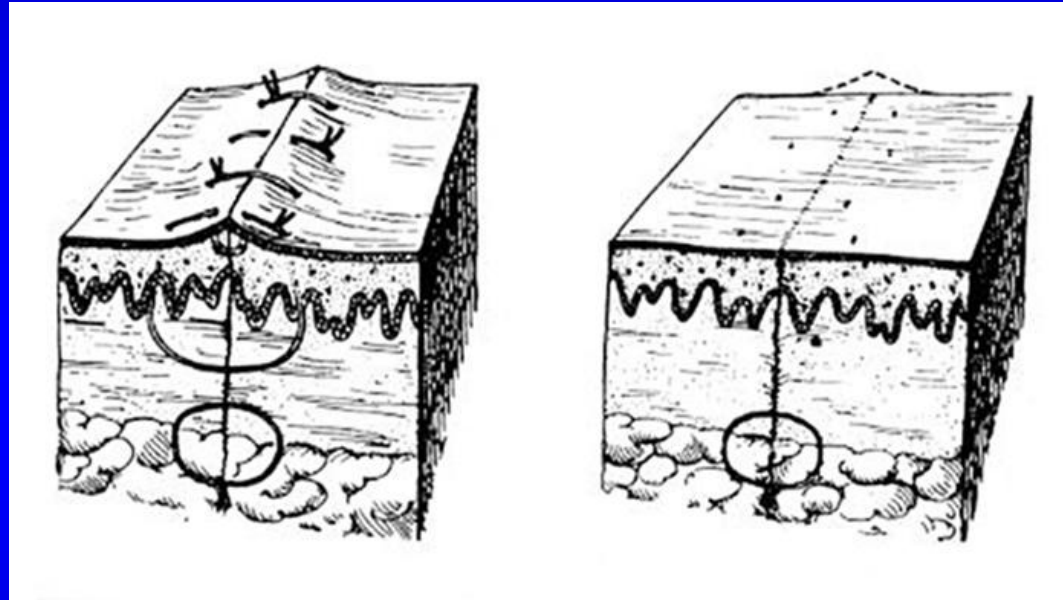


... Requires fine instruments & sutures

QuickTime™ and a
QuickTime™ viewer
are needed to see this picture.

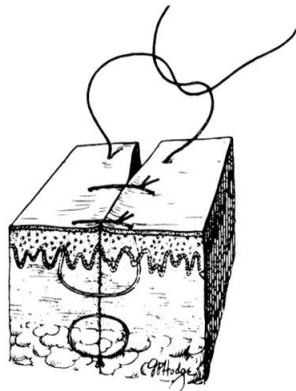
And atraumatic handling of tissues...

Suturing techniques

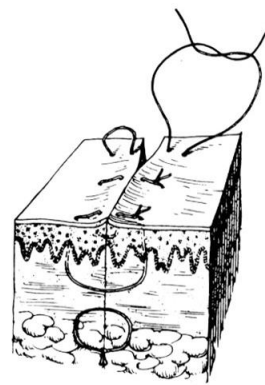


Skin edges everted, dead space closed.

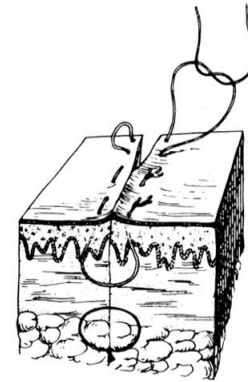
Suturing techniques...



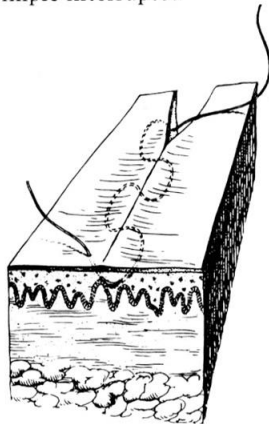
A. Simple interrupted



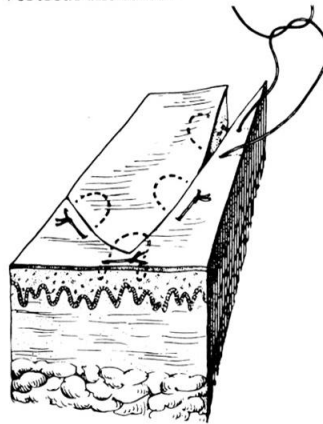
B. Vertical mattress



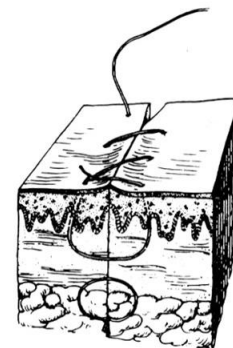
C. Horizontal mattress



D. Subcuticular continuous



E. Half-buried horizontal mattress



F. Continuous over and over

Procedures available for wound closure

1. Secondary intention

2. Direct closure or sliding flaps (elliptical excision)

3. Local flaps

-Rotation

-Transposition

Rhomboid

Z-Plasty

Bi-lobed

Simple Transposition + skin graft secondary defect

-Advancement

4. Skin Grafts

-Split thickness

-Full thickness

-Composite

Procedures available for wound closure

1. Secondary intention

2. Direct closure or sliding flaps (elliptical excision)

3. Local flaps

-Rotation

-Transposition

Rhomboid

Z-Plasty

Bi-lobed

Simple Transposition + skin graft secondary defect

-Advancement

4. Skin Grafts

-Split thickness

-Full thickness

-Composite

Secondary Intention



Procedures available for wound closure

1. Secondary intention

2. Direct closure (*after elliptical excision*)

3. Local flaps

-*Rotation*

-*Transposition*

Rhomboid

Z-Plasty

Bi-lobed

Simple Transposition + skin graft secondary defect

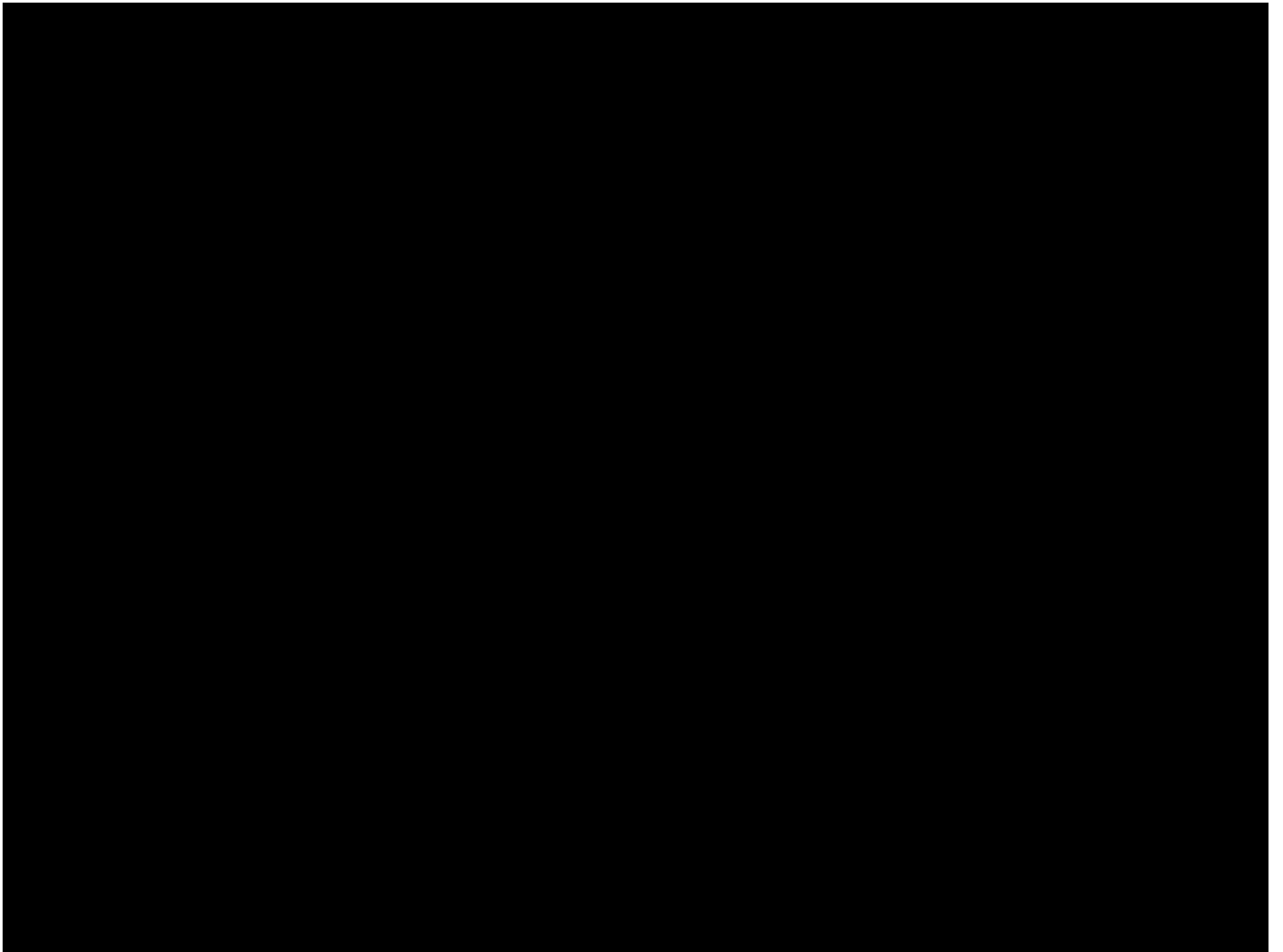
-*Advancement*

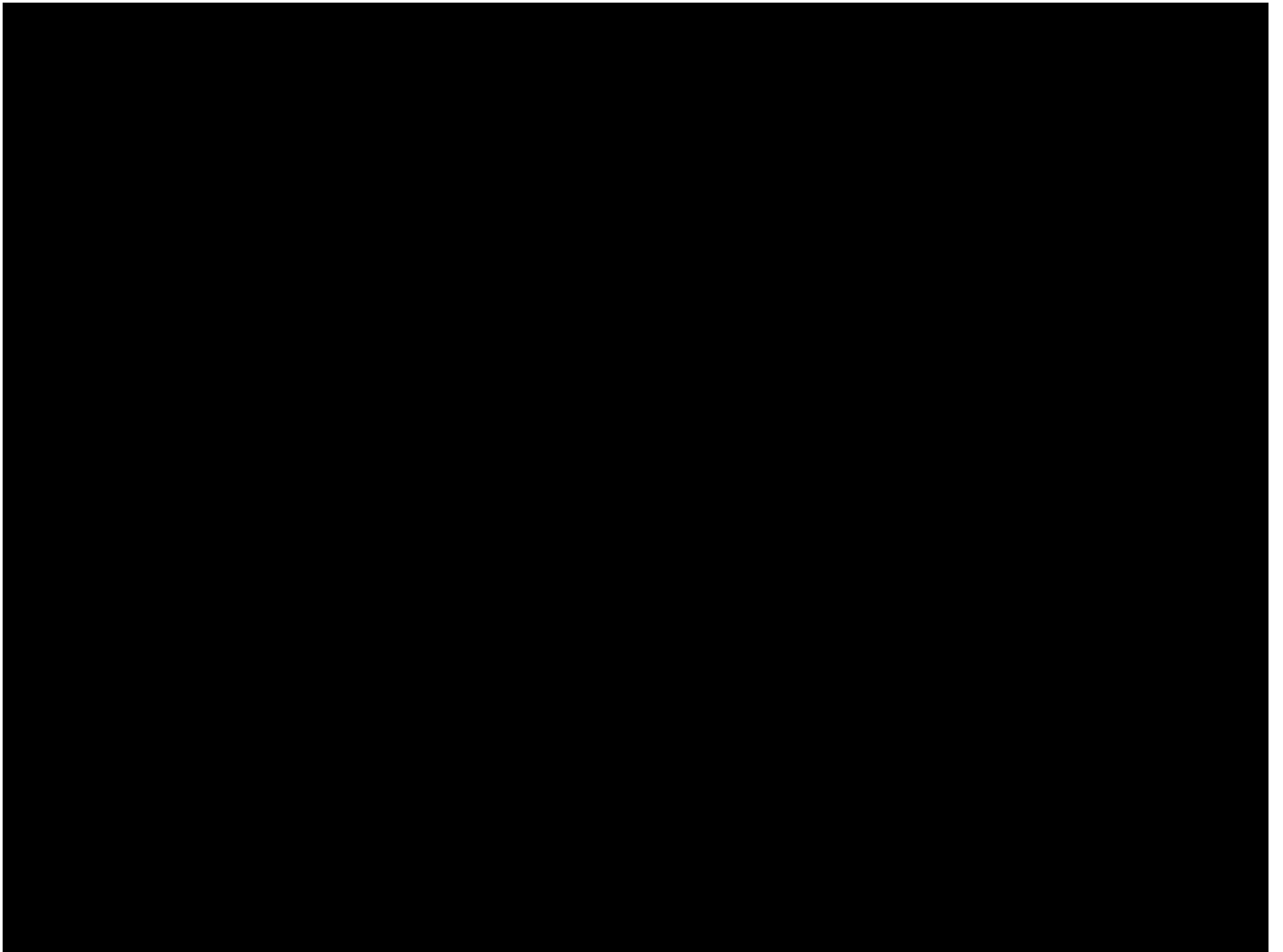
4. Skin Grafts

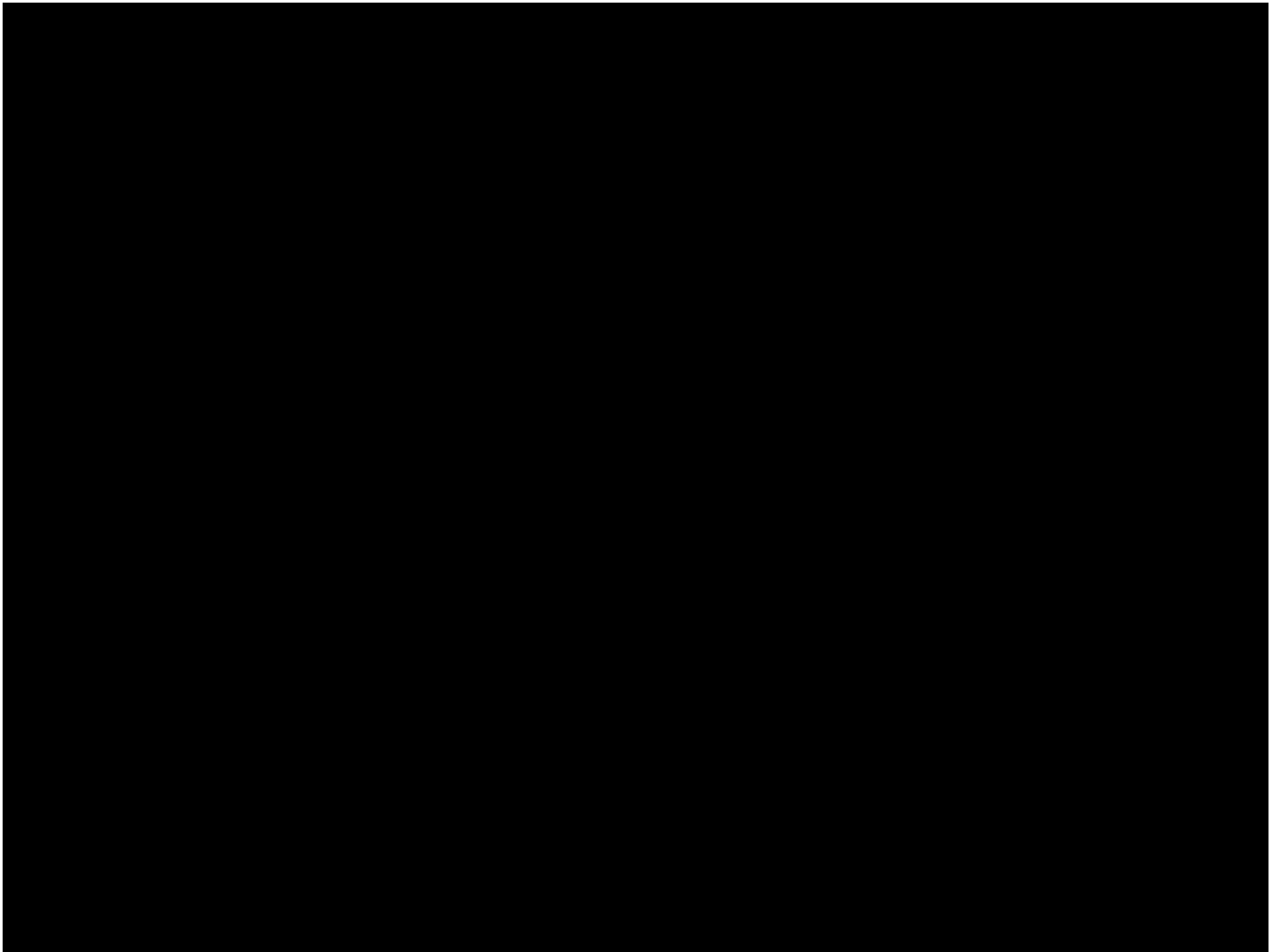
-*Split thickness*

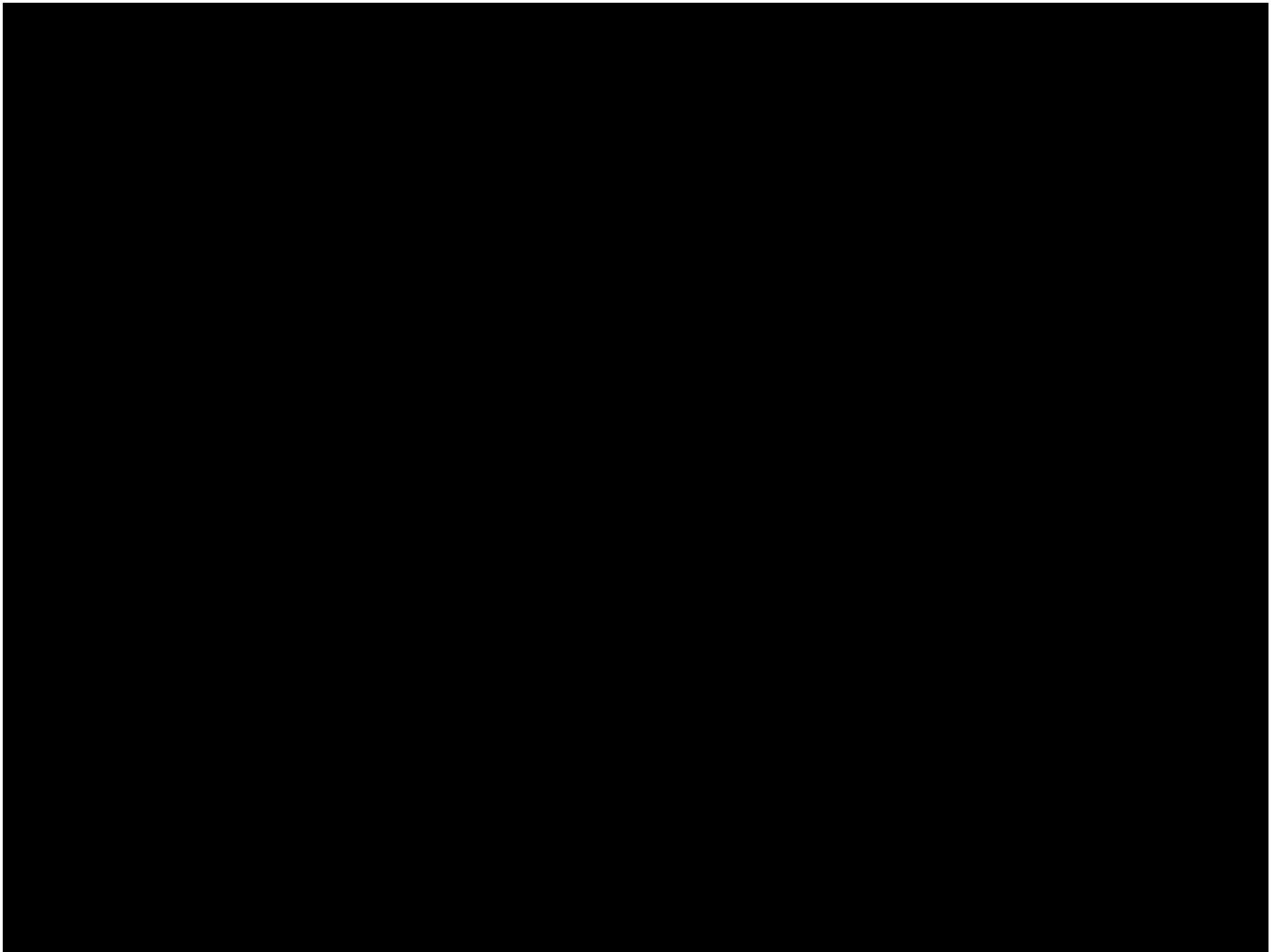
-*Full thickness*

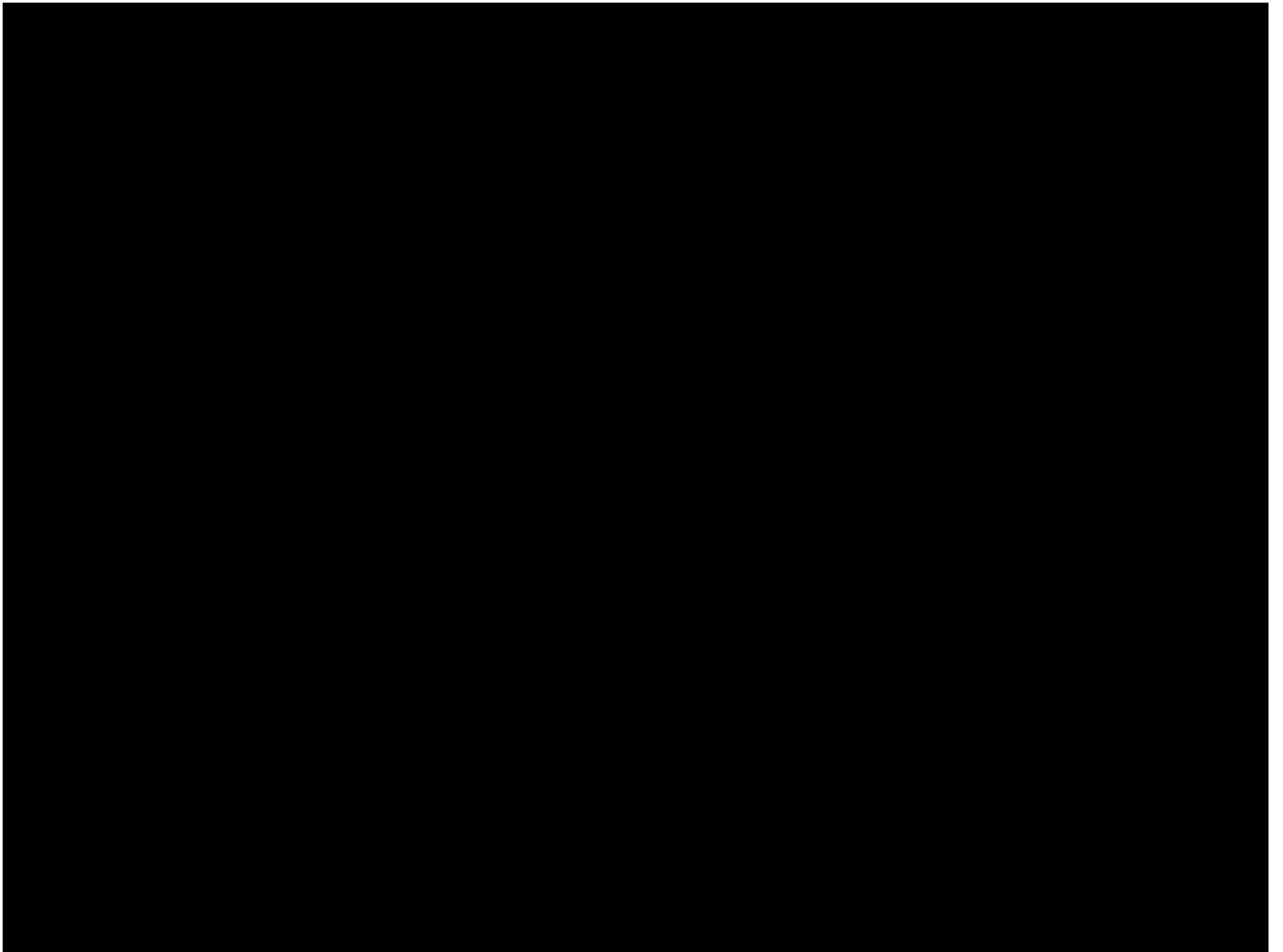
-*Composite*

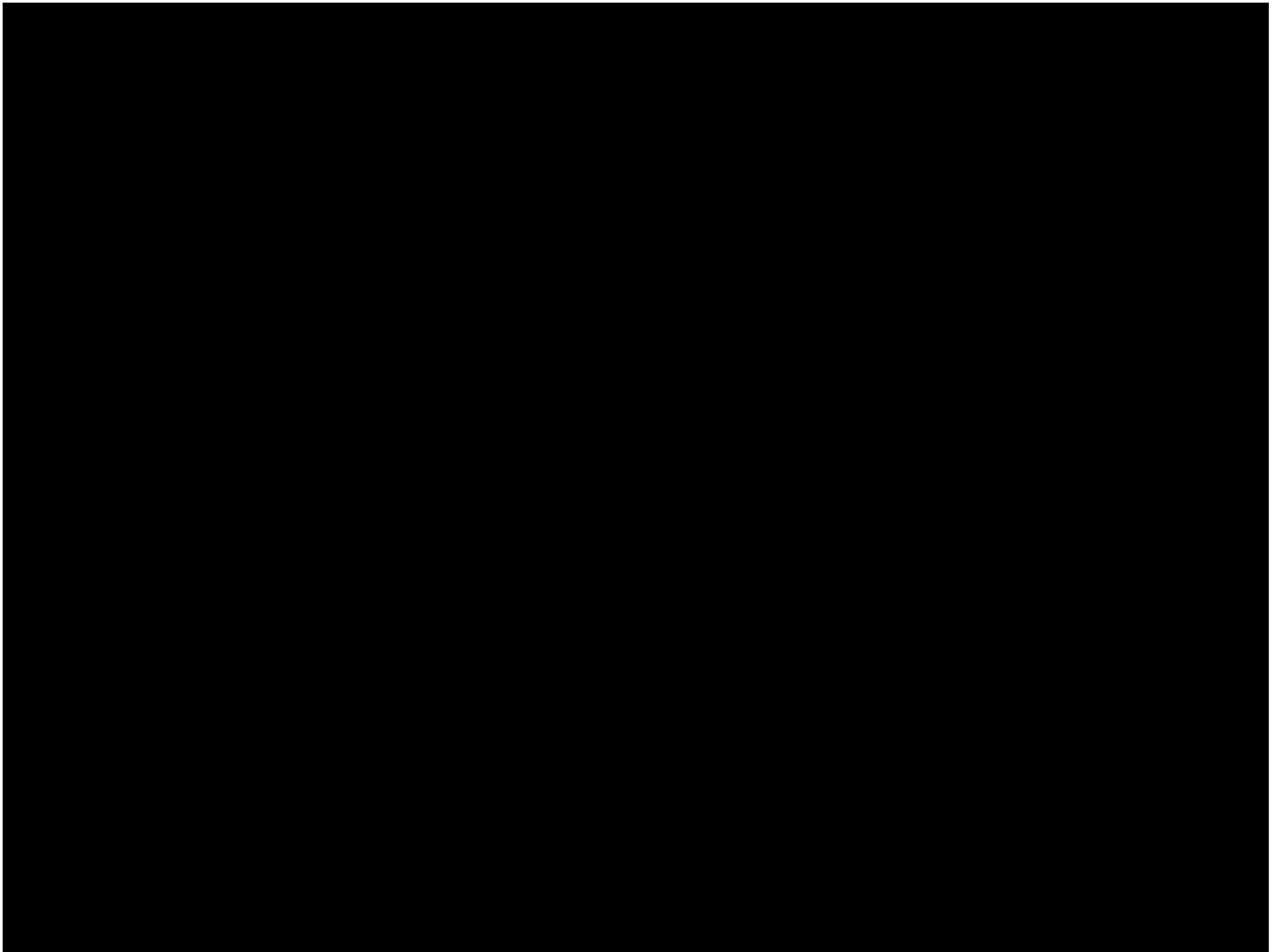


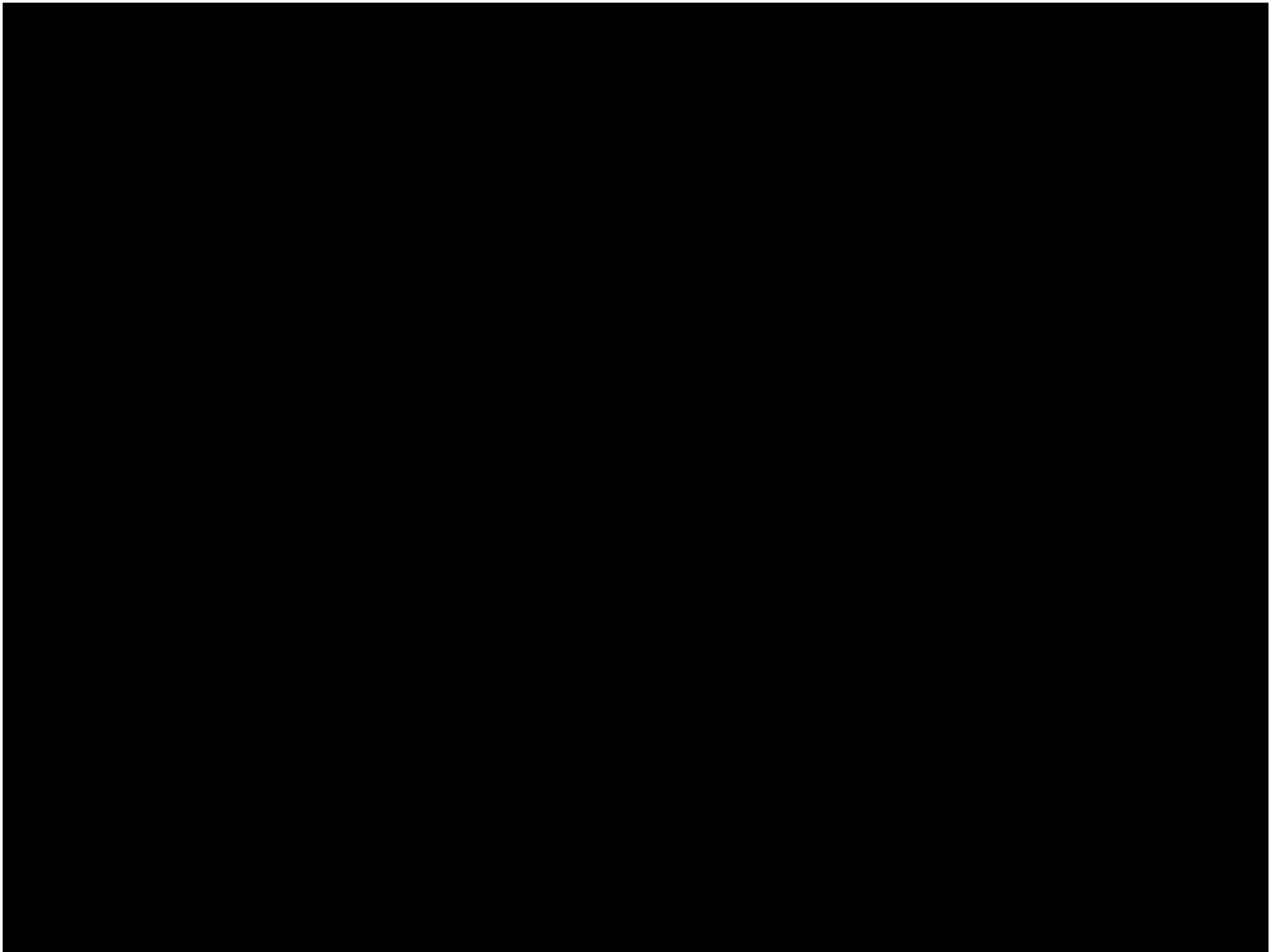


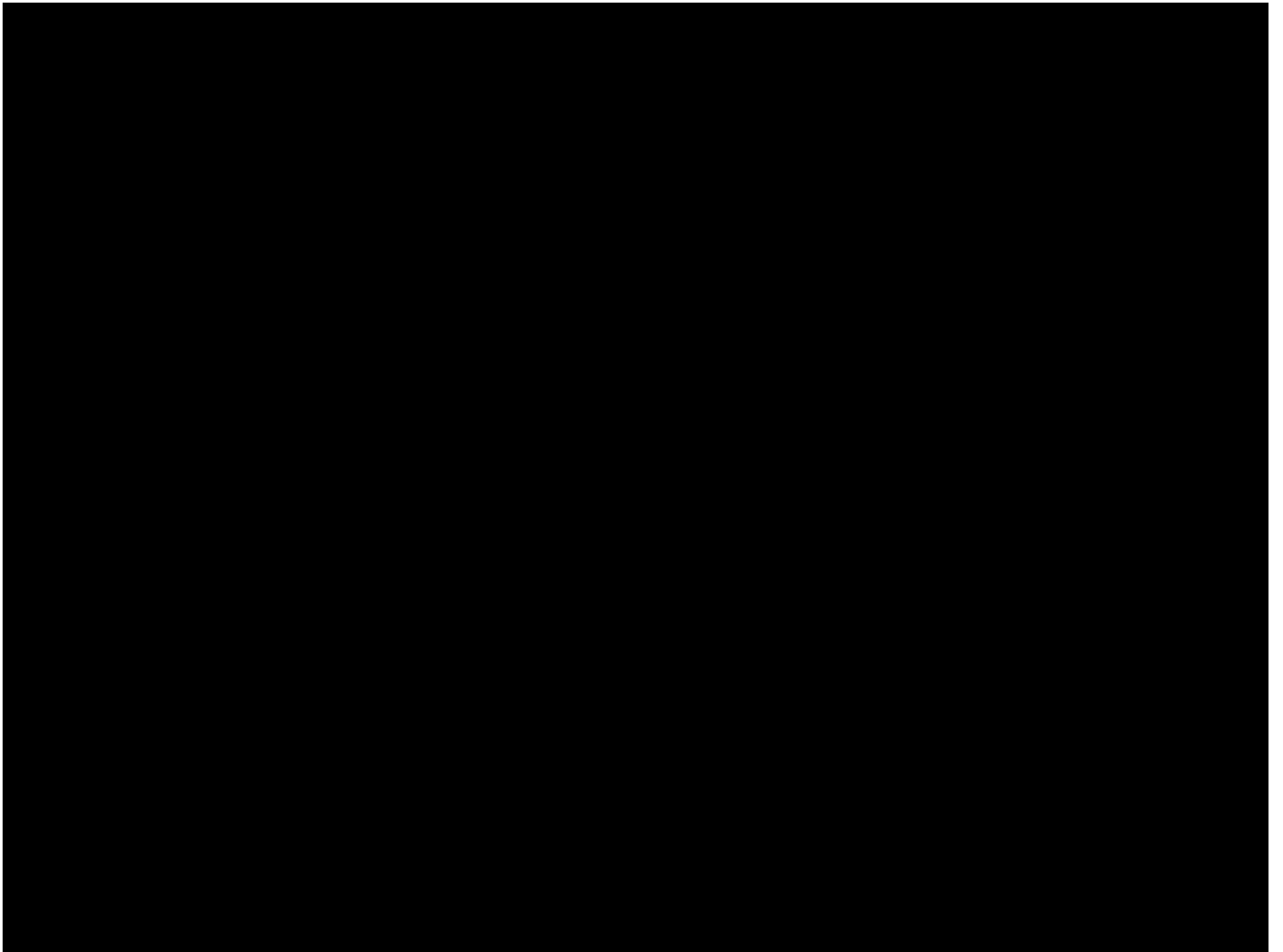












Procedures available for wound closure

1. Secondary intention
2. Direct closure or sliding flaps (elliptical excision)

3. Local flaps

-Rotation

-Transposition

Rhomboid

Z-Plasty

Bi-lobed

Simple Transposition + skin graft secondary defect

-Advancement

4. Skin Grafts

-Split thickness

-Full thickness

-Composite

Local flaps

-Rotation

-Transposition

Rhomboid

Z-Plasty

Bi-lobed

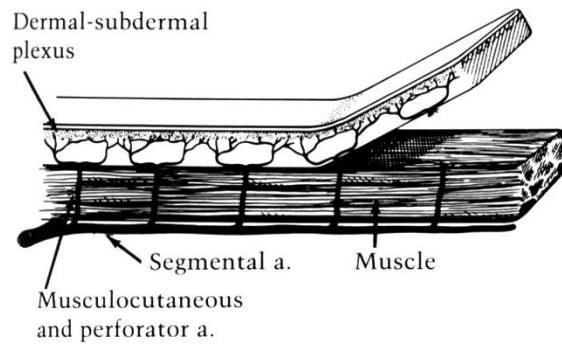
Simple Transposition + skin graft

secondary defect

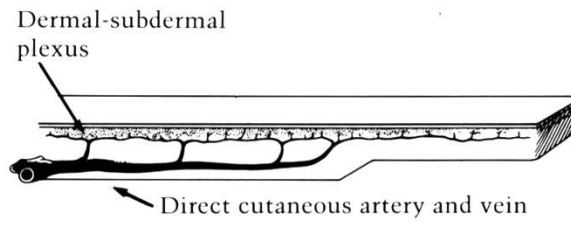
-Advancement

What is a Flap??

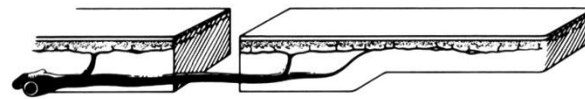
- A segment of skin +/- subcutis on a vascular pedicle raised adjacent to a defect and moved to close that defect
- Usually random pattern (cf axial pattern), i.e. dependent on the local random capillary dermal network for blood supply
- 1:1 length /width ratio safe, 2:1 sometimes safe on face, >2:1 for specialists only
- Lower leg poor dermal network-unsafe for local flaps



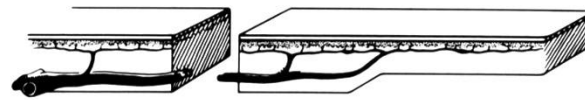
A. RANDOM PATTERN SKIN FLAP



1. Peninsular axial pattern flap



2. Island axial pattern flap



3. Free flap

B. AXIAL PATTERN SKIN FLAPS

This is a flap (*Bilobed Transposition Flap*)

QuickTime™ and a
decompressor
are needed to see this picture.

This is a graft



Flap

A graft may be simpler...

QuickTime™ and a decompressor are needed to see this picture.

Graft



Procedures available for wound closure

1. Secondary intention
2. Direct closure or sliding flaps (elliptical excision)
3. Local flaps

- Rotation*

- Transposition*

 - Rhomboid

 - Z-Plasty

 - Bi-lobed

 - Simple Transposition + skin graft secondary defect

- Advancement*

4. Skin Grafts

- Split thickness*

- Full thickness*

- Composite*

Skin Grafts

-Split thickness

-Full thickness

-Composite

What is a Graft?

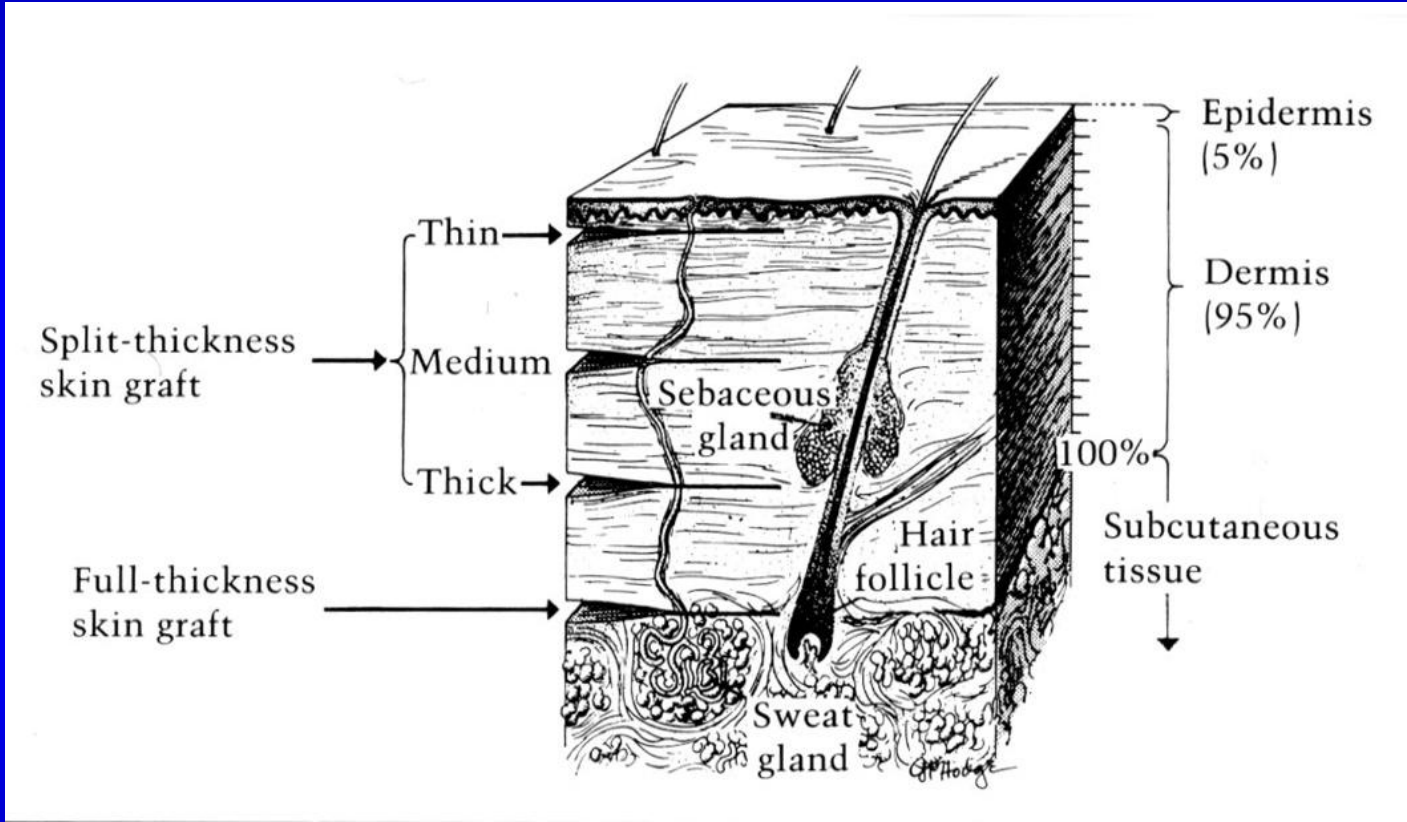
A skin graft is skin totally separated from its blood supply and transposed to fill a defect, where it survives by developing a new blood supply.

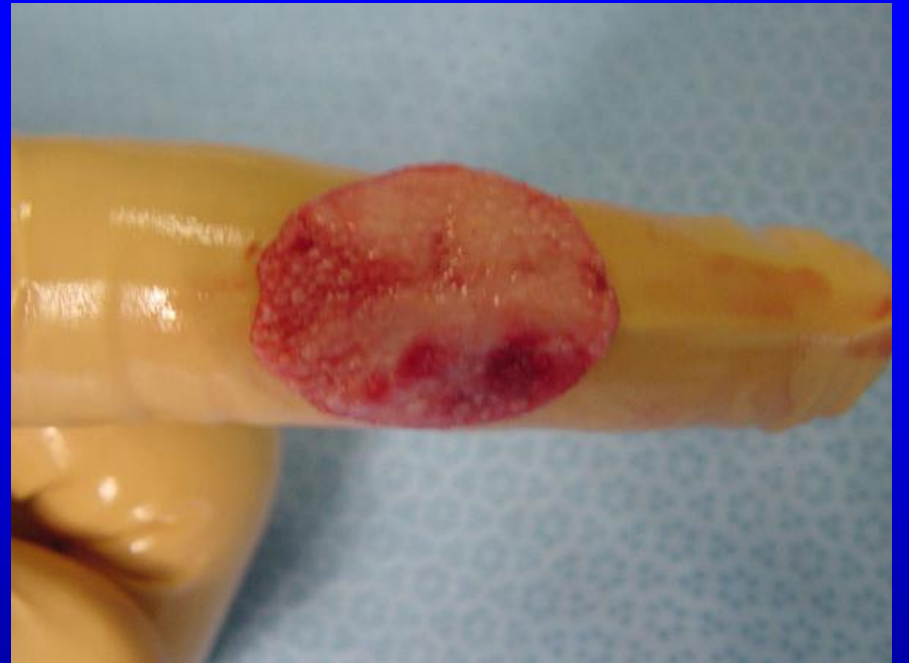
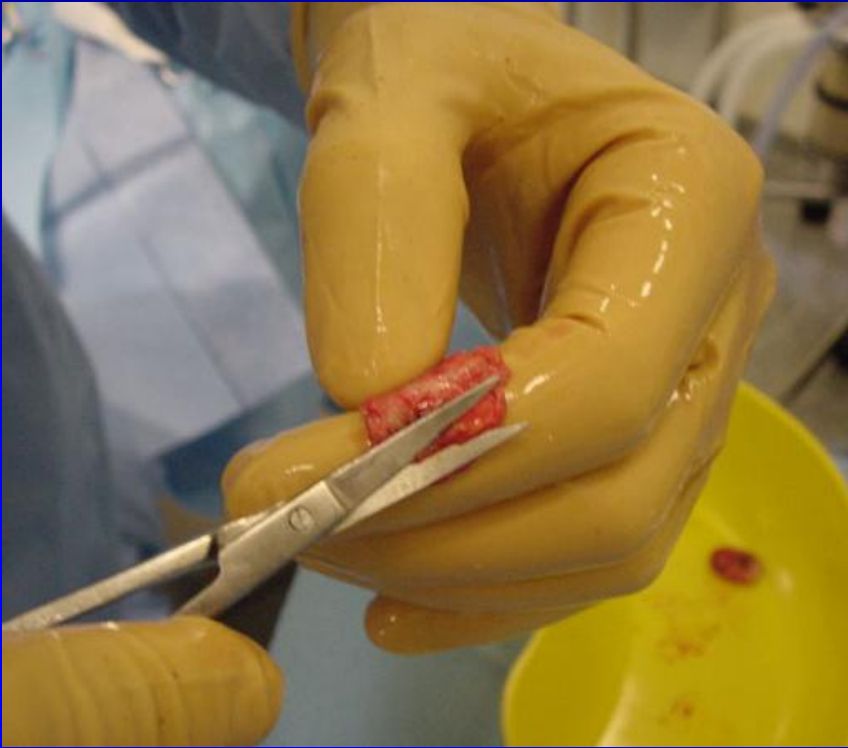
- Split-thickness
- Full-thickness (*Wolfe Graft*)

Post auricular

Supra-clavicular

Groin





Selecting Best Procedure

- Depends on availability of adjacent skin
- Proximity to anatomical features (e.g. eyes, nose, lips)
- Patient's wishes

Selection by anatomical region

- Back - Ellipse
- Trunk - Ellipse
- Limbs - Ellipse
- Face - Ellipse, where possible

Elliptical Excision & Direct Closure

Advantages

Simple

Quick

Straight uncomplicated scar

Disadvantages

Long scar

Not always applicable to local anatomy

May require extensive undermining if tight



Image courtesy of Glenn Bartlett



Image courtesy of Glenn Bartlett



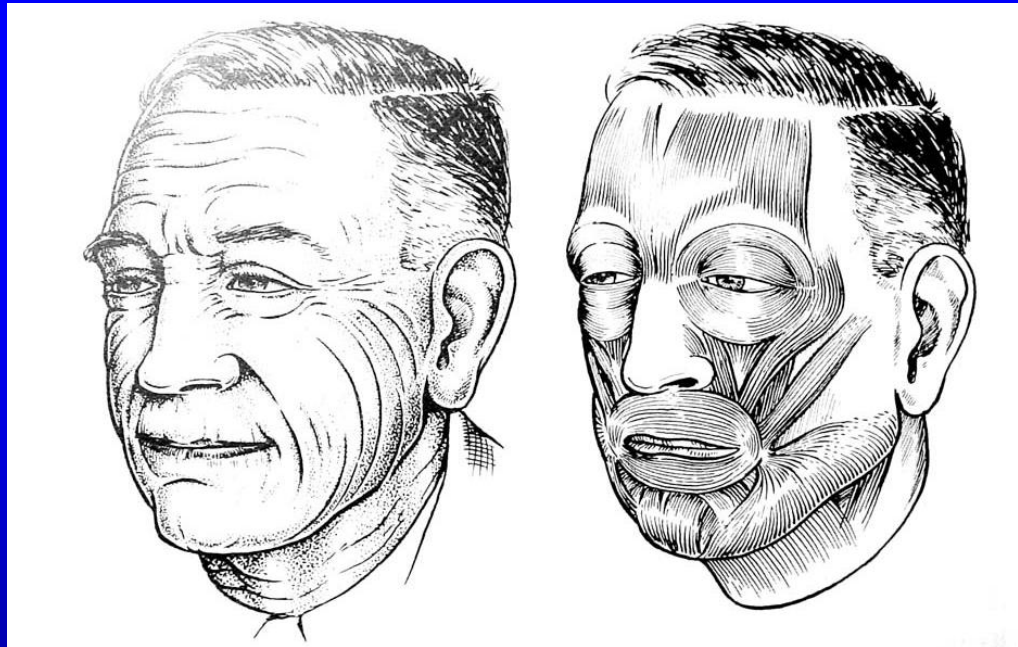
Image courtesy of Glenn Bartlett



Image courtesy of Glenn Bartlett

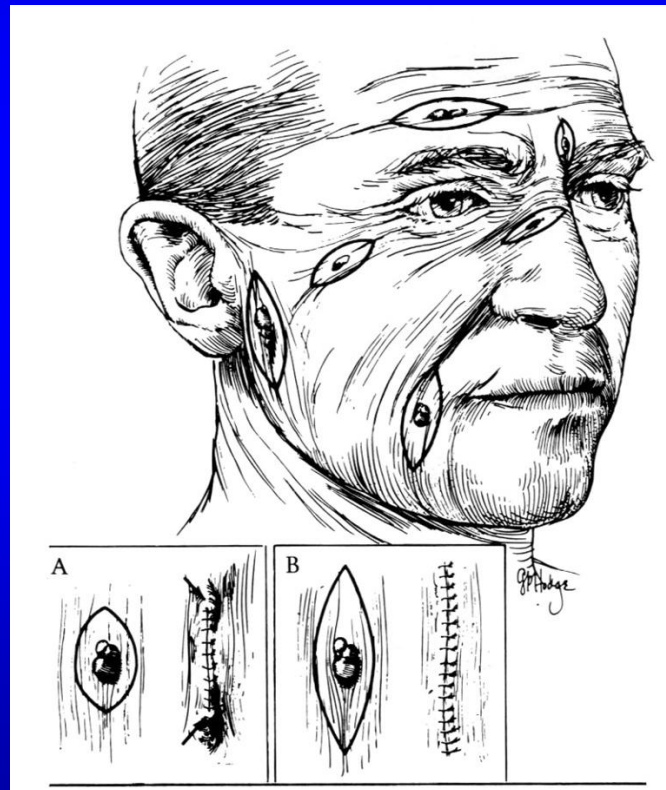
Selecting the direction of the ellipse

- Parallel to wrinkle lines
- Right-angles to relaxed skin tension lines (*Langer's lines*)



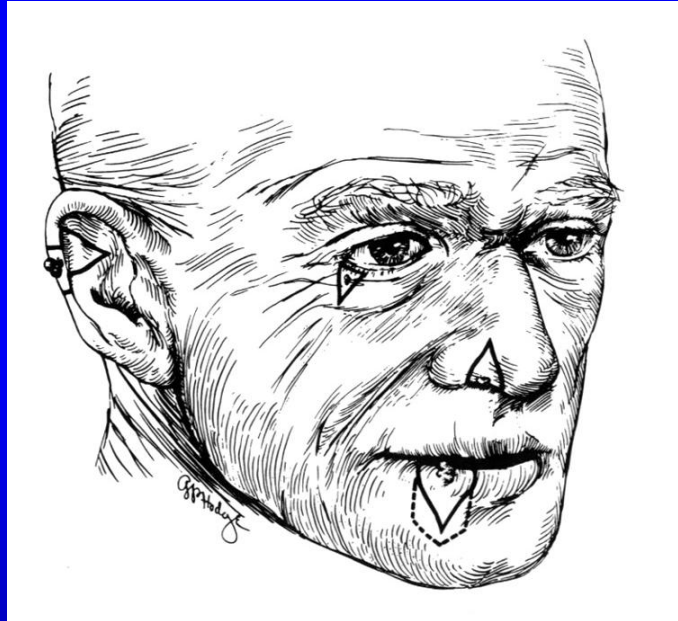
Selecting the direction of the ellipse...

Right angles to relaxed skin tension lines,
parallel to wrinkle lines



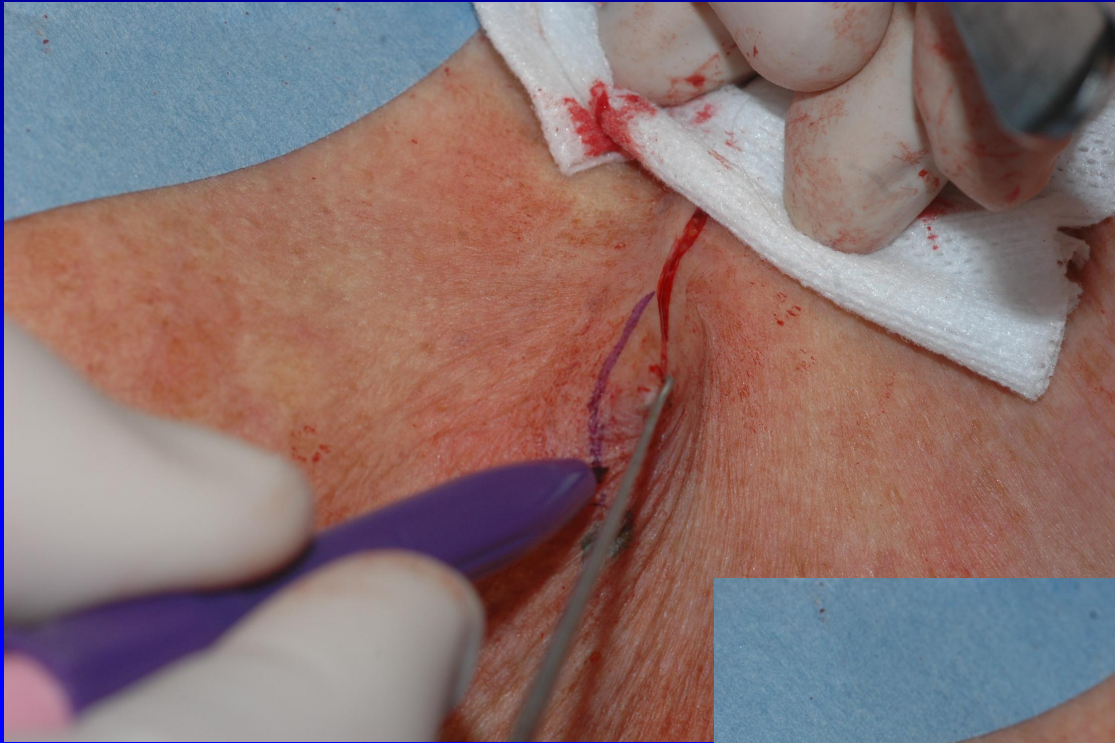
Selecting the direction of the ellipse...

Right angles to free borders (wedge excisions)



If uncertain about direction, excise as a circle and observe the direction of the long axis of the oval (*Flint Circles*)







Anticipating the orientation of elliptical excision

Rubber stamp for pre-op marking

















Why use a Flap??

- Too tight to close or defect too large
- Defect adjacent to critical structure
- Prevent functional deficit from scar

Flaps -Advantages

- Good colour and contour match
- Can close larger hole with shorter scar

Flaps -Disadvantages

- Require expertise
- Complex scars
- Anticipated flap failures

Local flaps

-Rotation

-Transposition

Rhomboid

Z-Plasty

Bi-lobed

Simple Transposition + skin graft

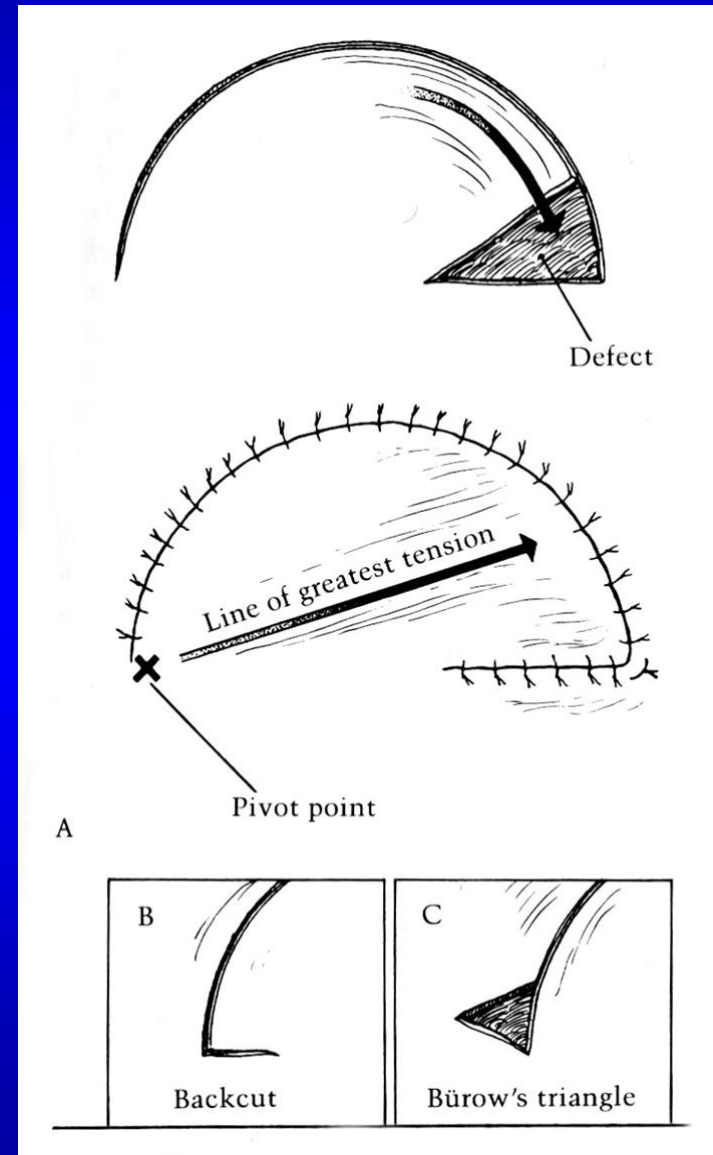
secondary defect

-Advancement

Local Flaps...

Rotation flap

- Used on cheek, scalp
Note: back-cut to relax tension
- Hatchet flap (*Glenn's nasalis flap*)

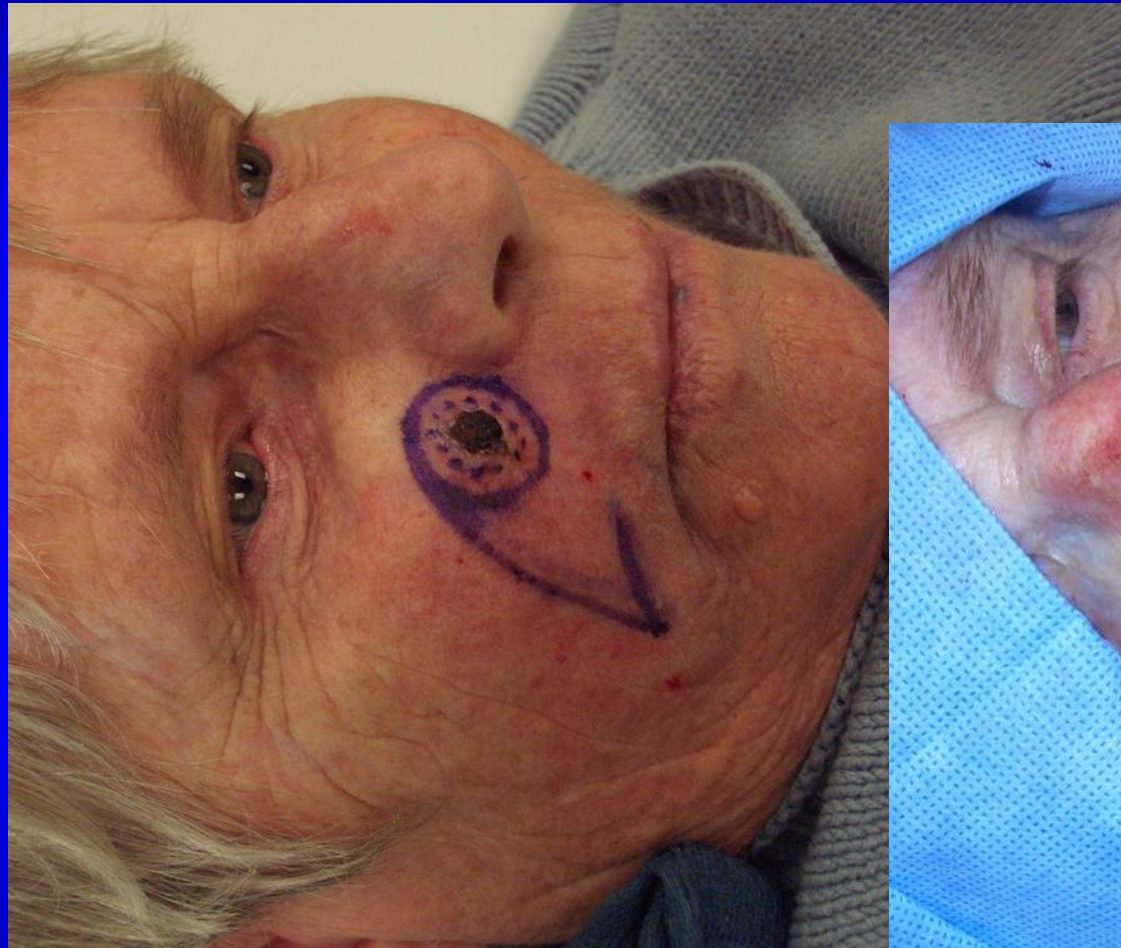


Cheek Rotation flap (stretch flap)



Images courtesy of Glenn Bartlett

Rotation flap (*Hatchet Flap*)



Rotation flap



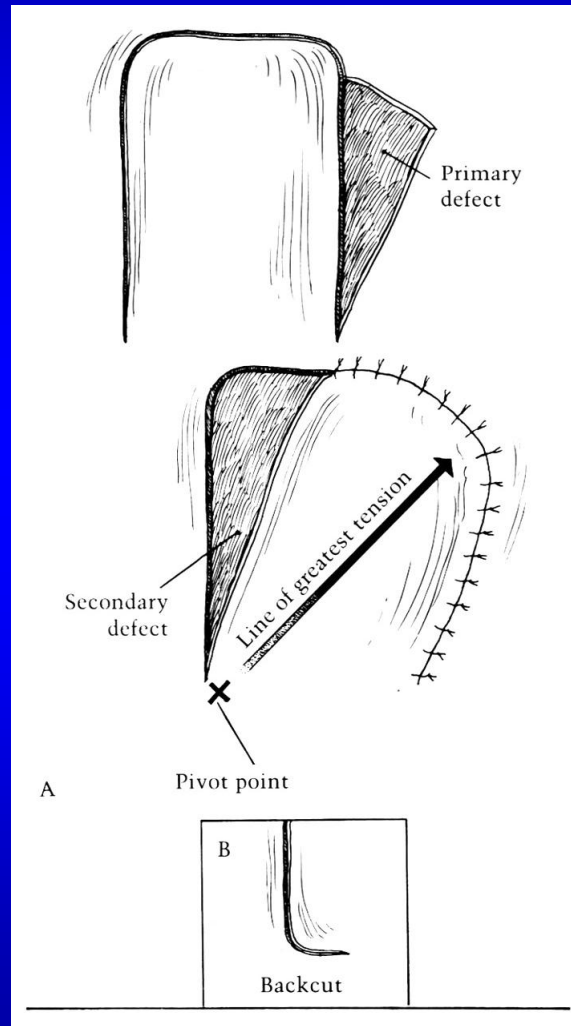
Images courtesy of Glenn Bartlett

PRACTISE

Rotation Flap

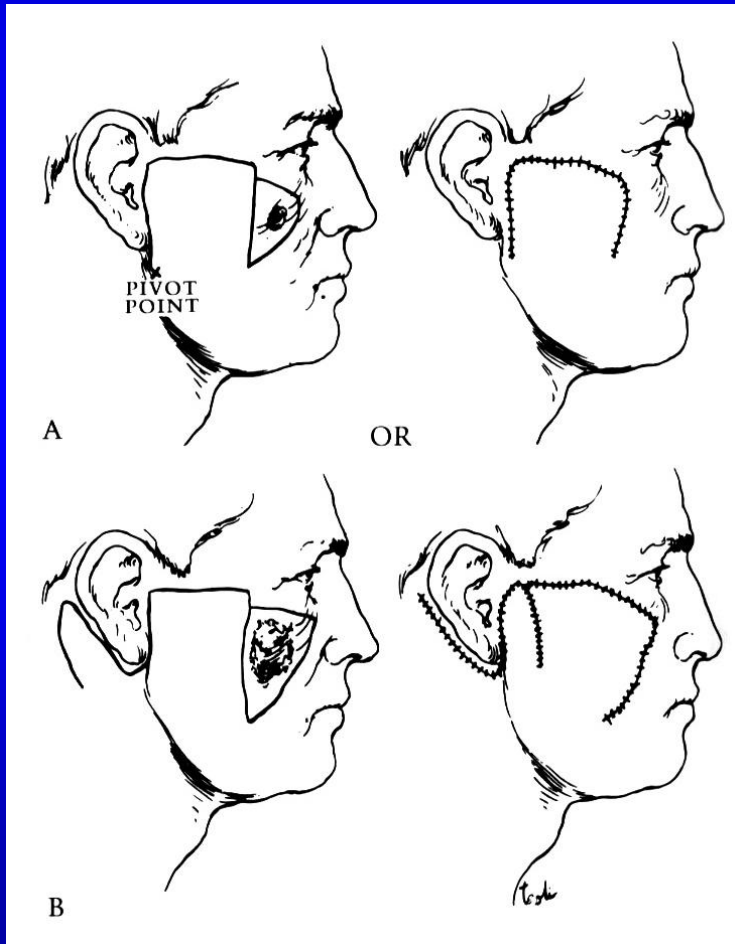
Local Flaps...

Transposition flap



Local Flaps...

Transposition flap



Rotation flap

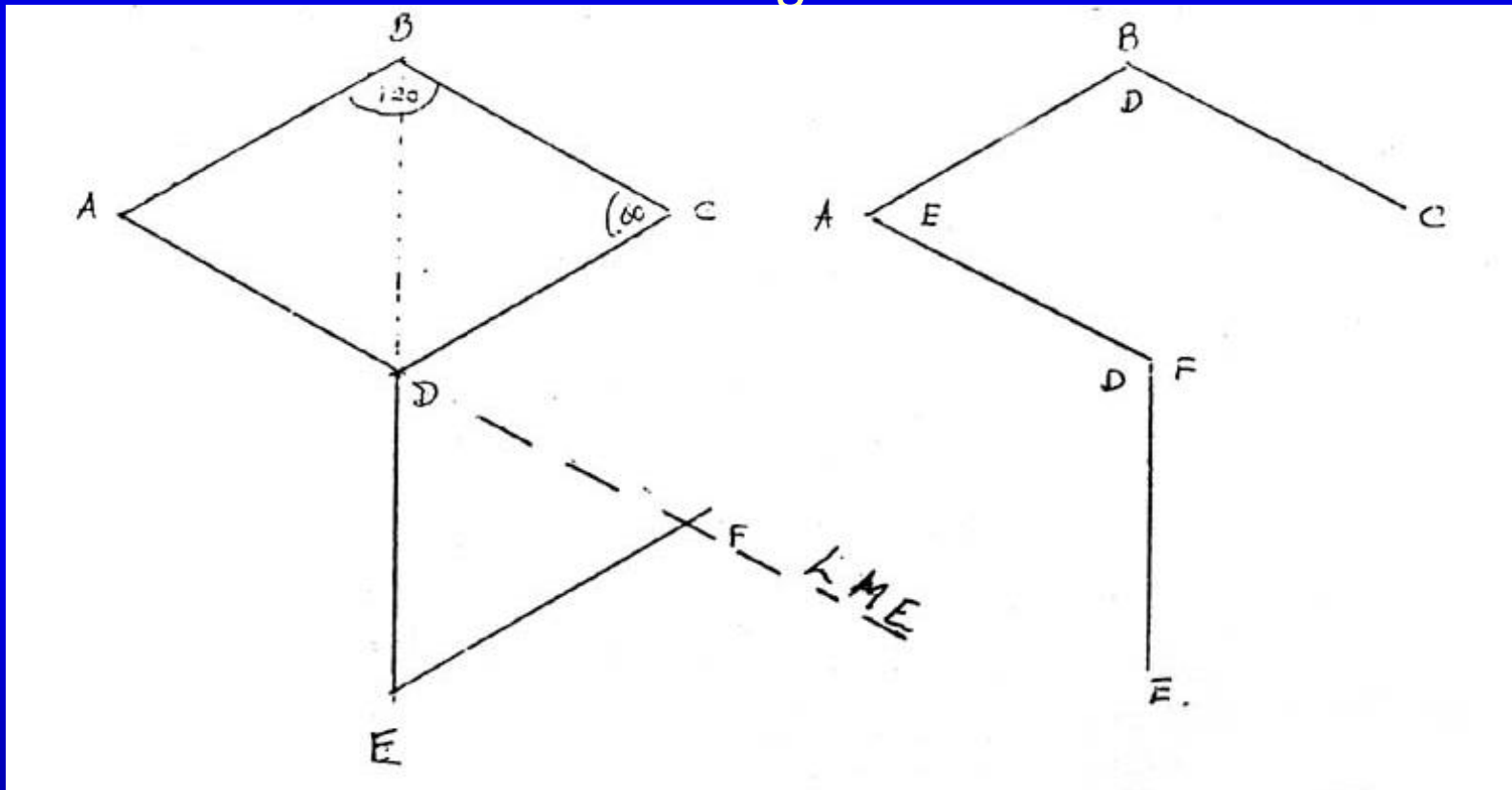


Image courtesy of Glenn Bartlett

Local Flaps...

Rhomboid Flap

Convert defect to 60 degree Rhomboid

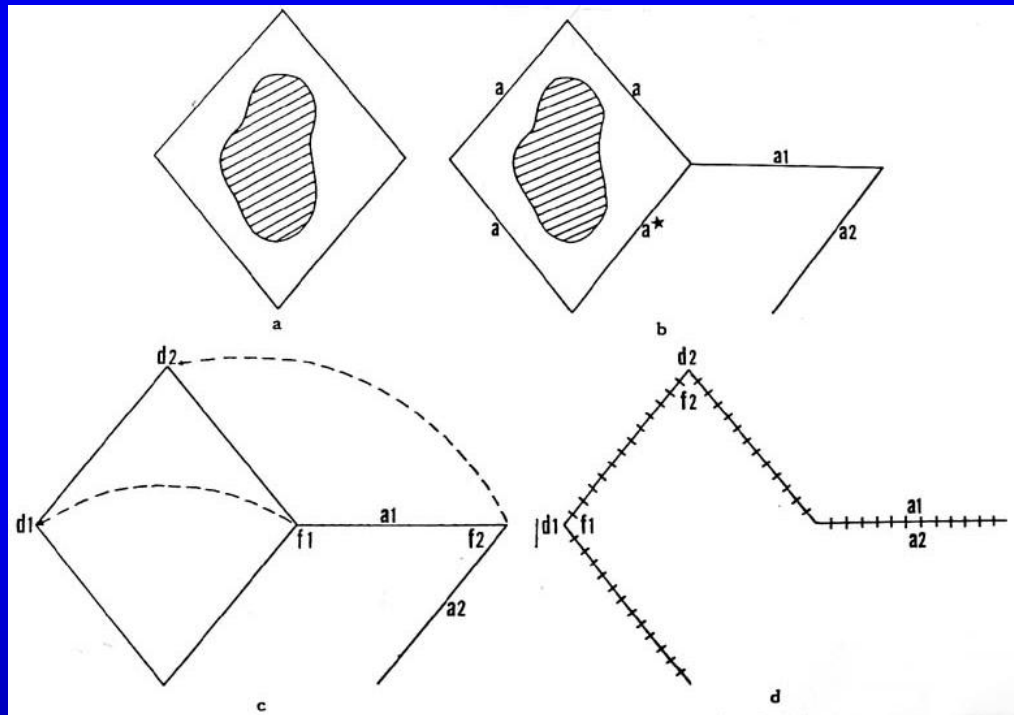


Rhomboid Flap

- Simple Transposition Flap
- Common “First” flap
- Suitable for cheek, occasionally back or shoulder

Rhomboid Flap

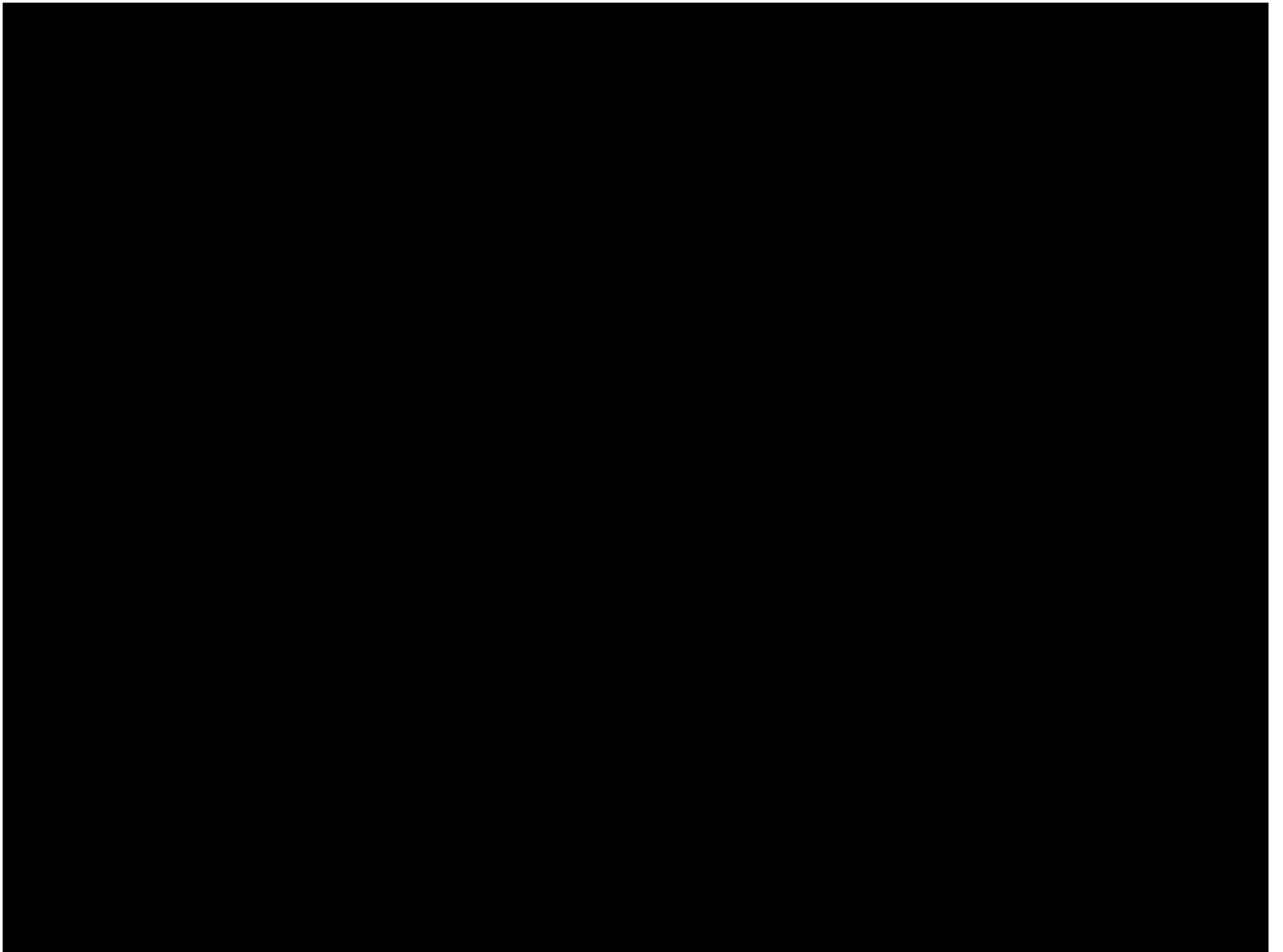
Align base of triangular flap 90 degrees to wrinkle lines

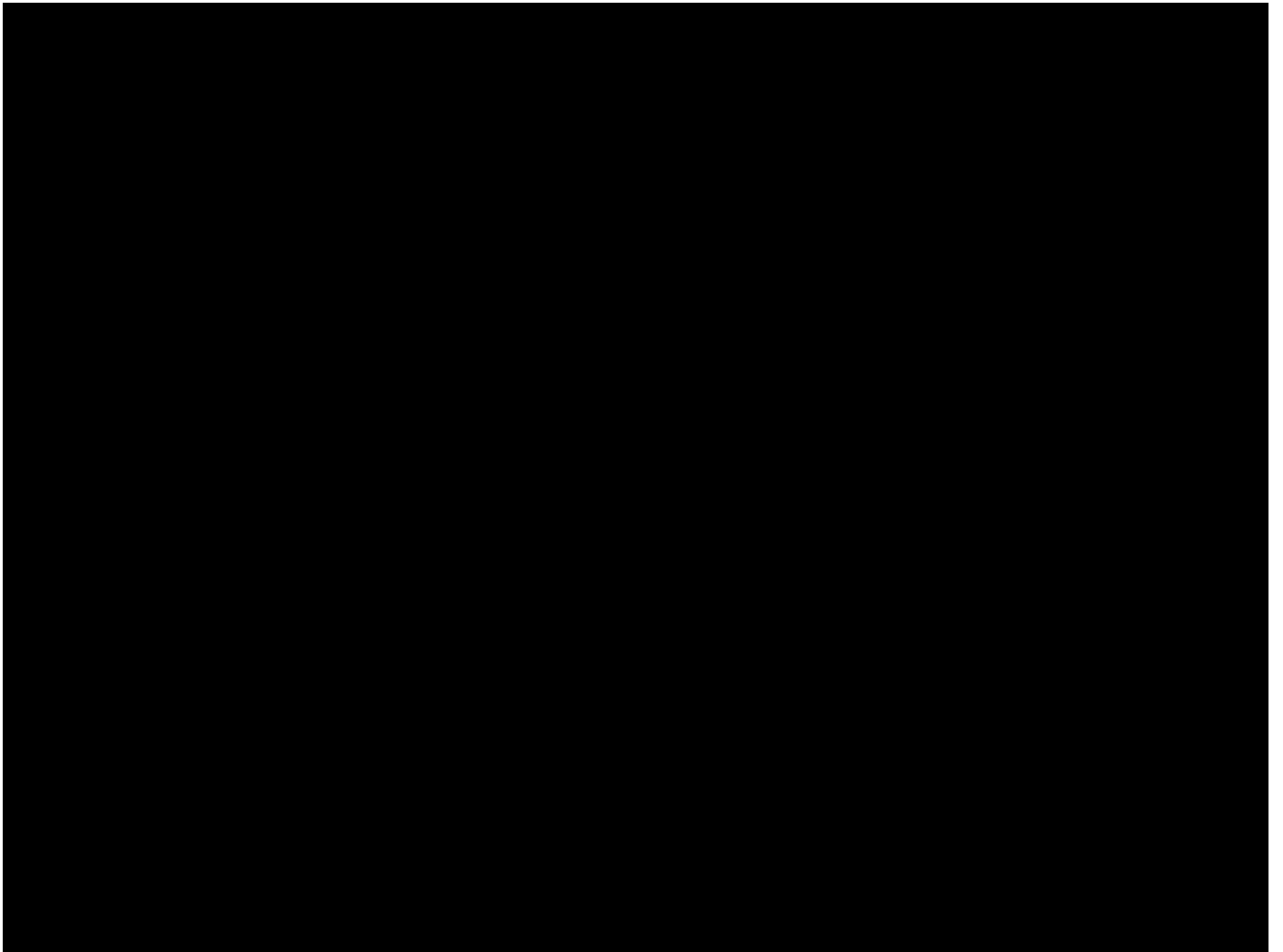


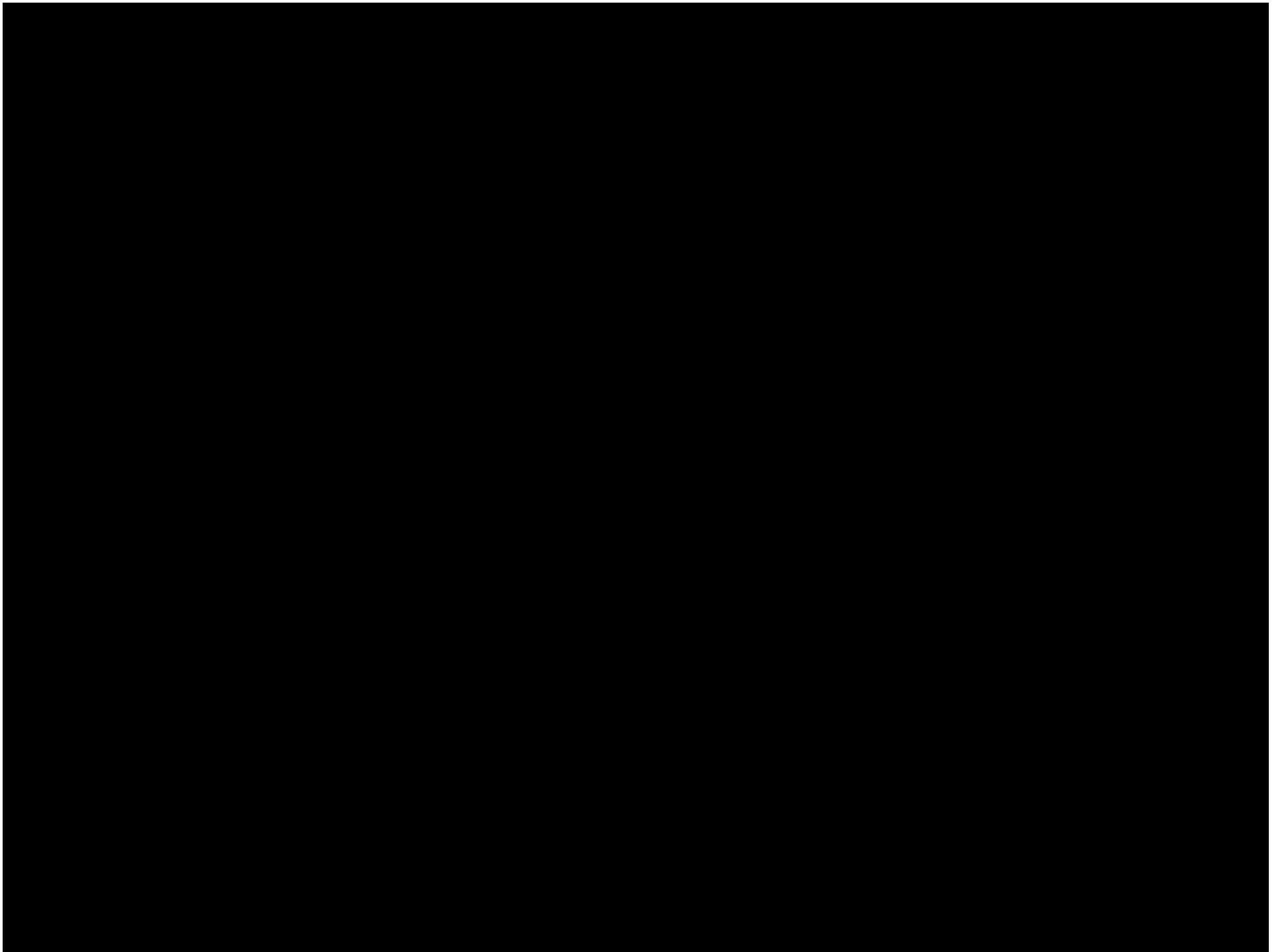


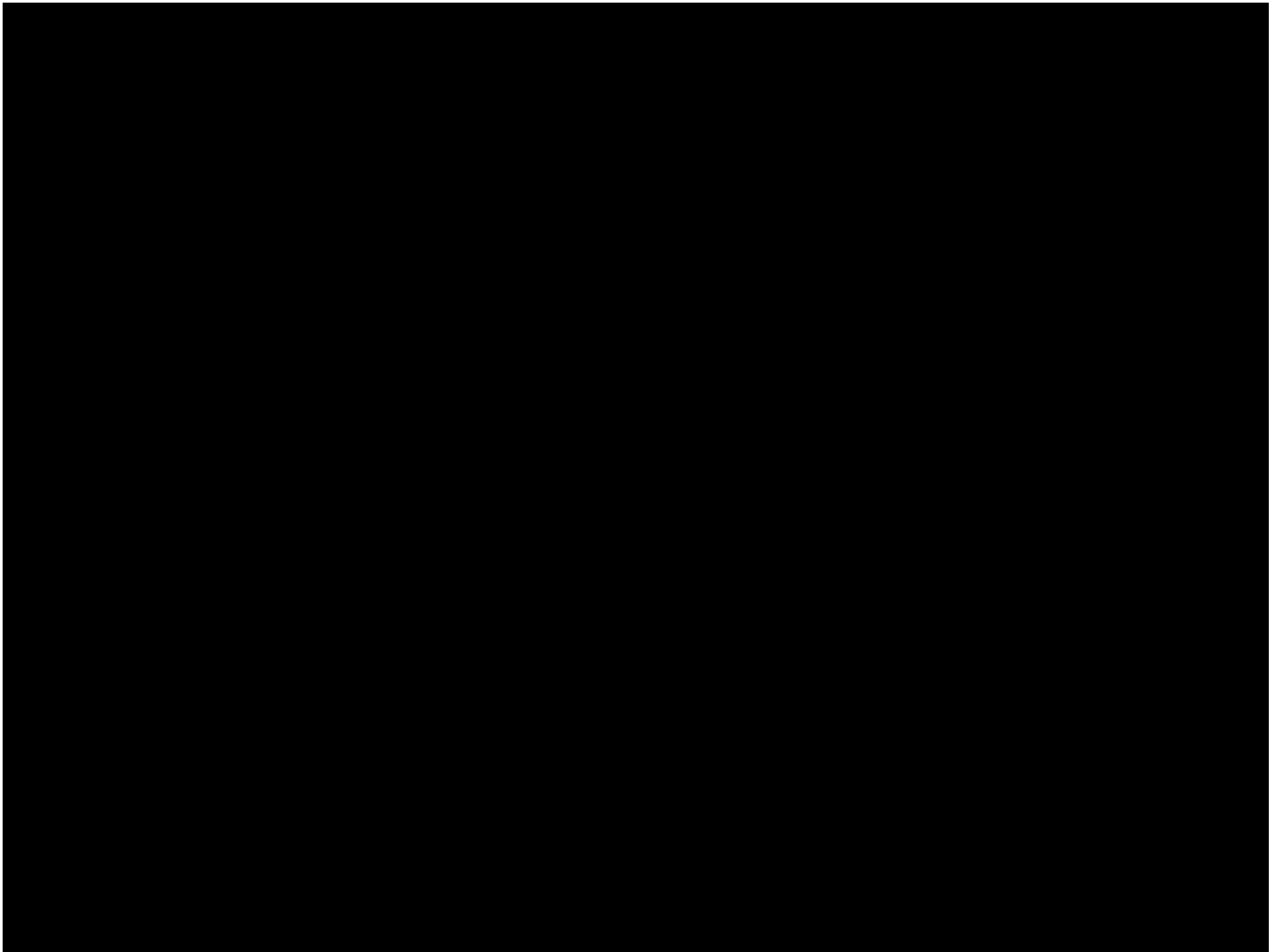
Small text or markings, possibly a signature or date, located in the lower right area of the blue background.

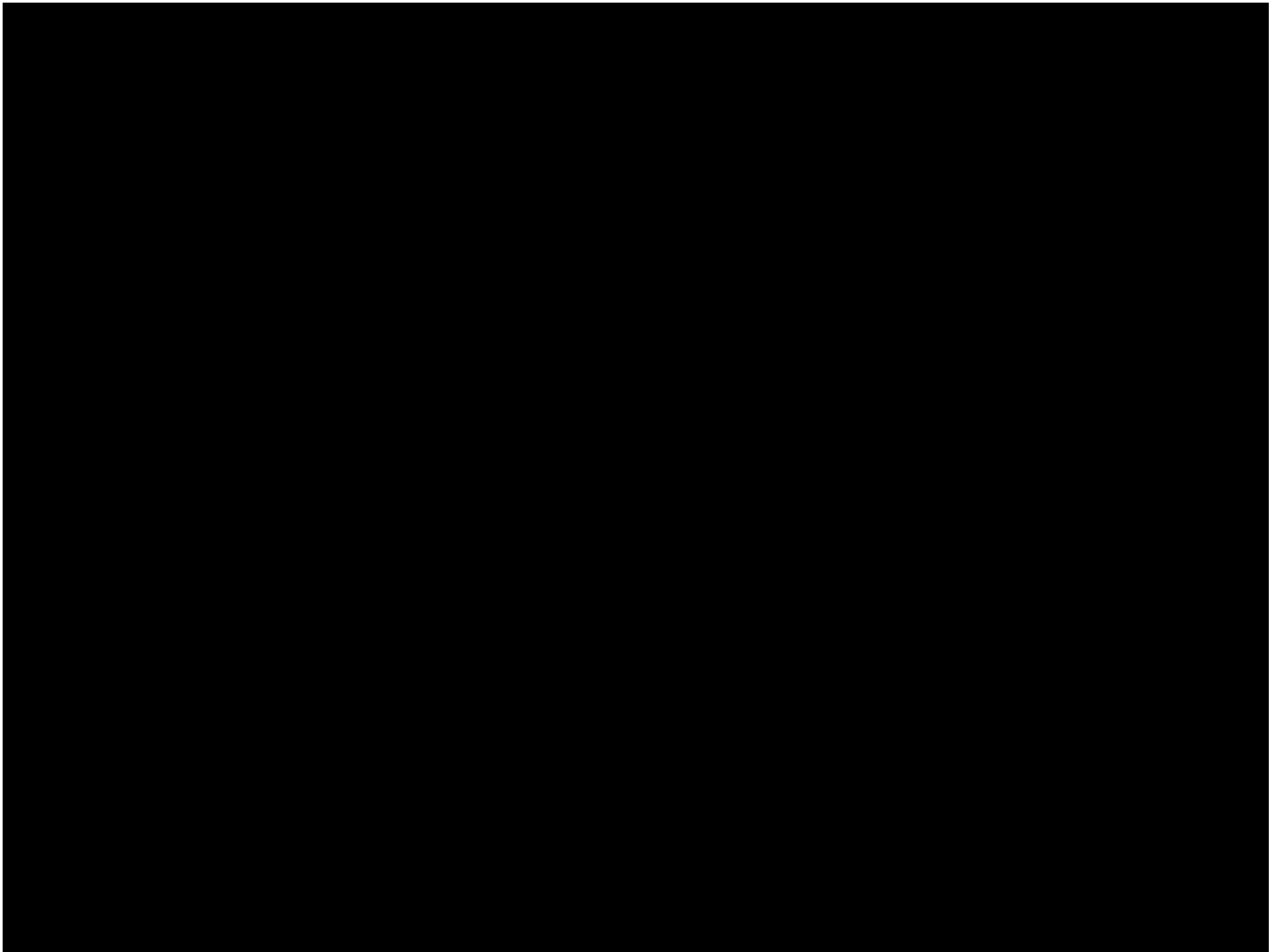
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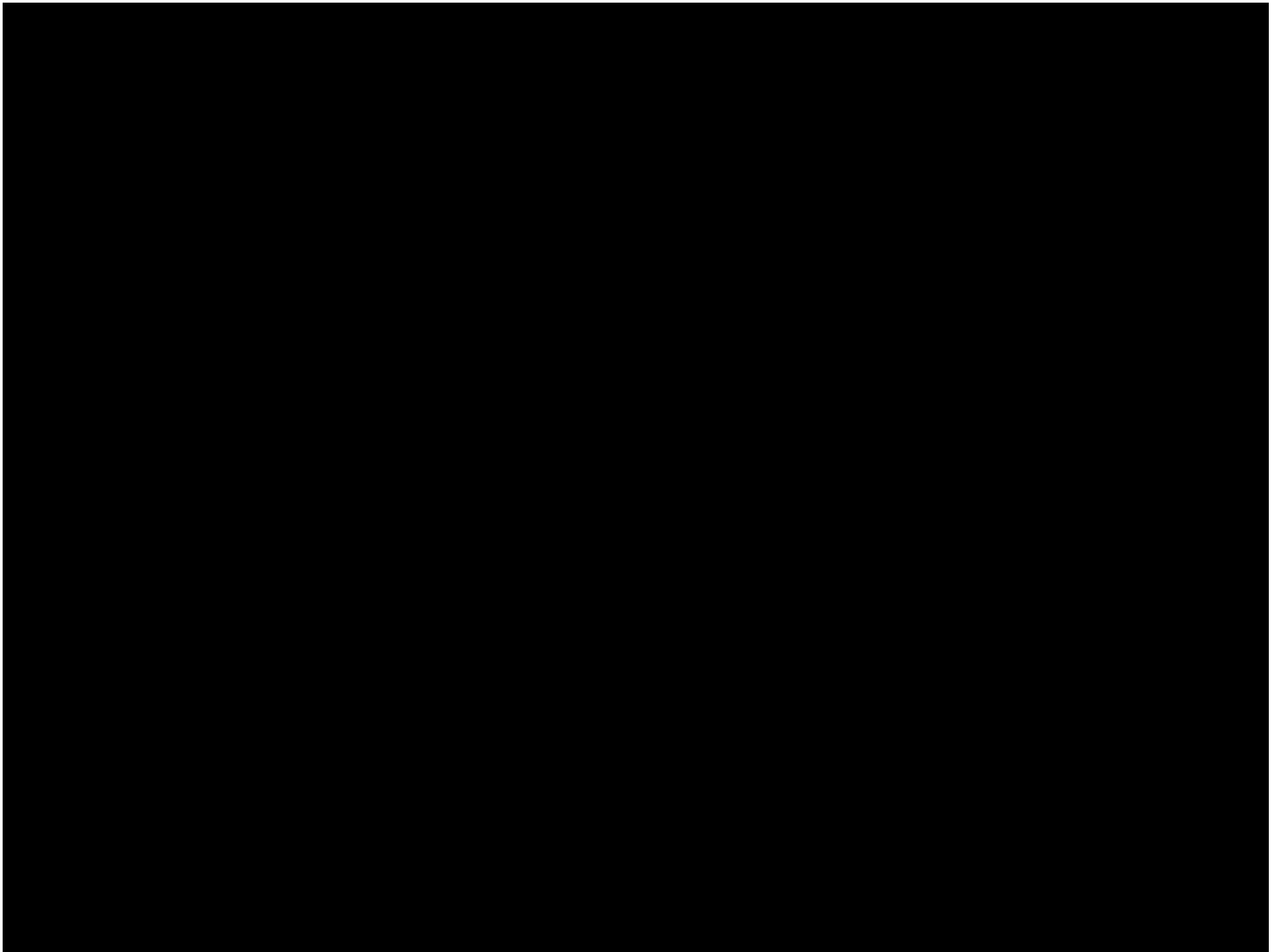






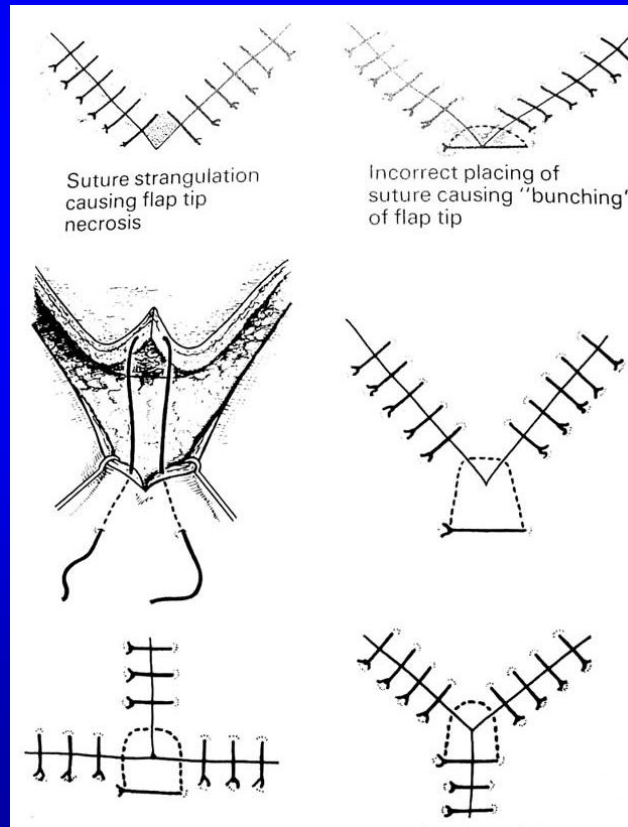


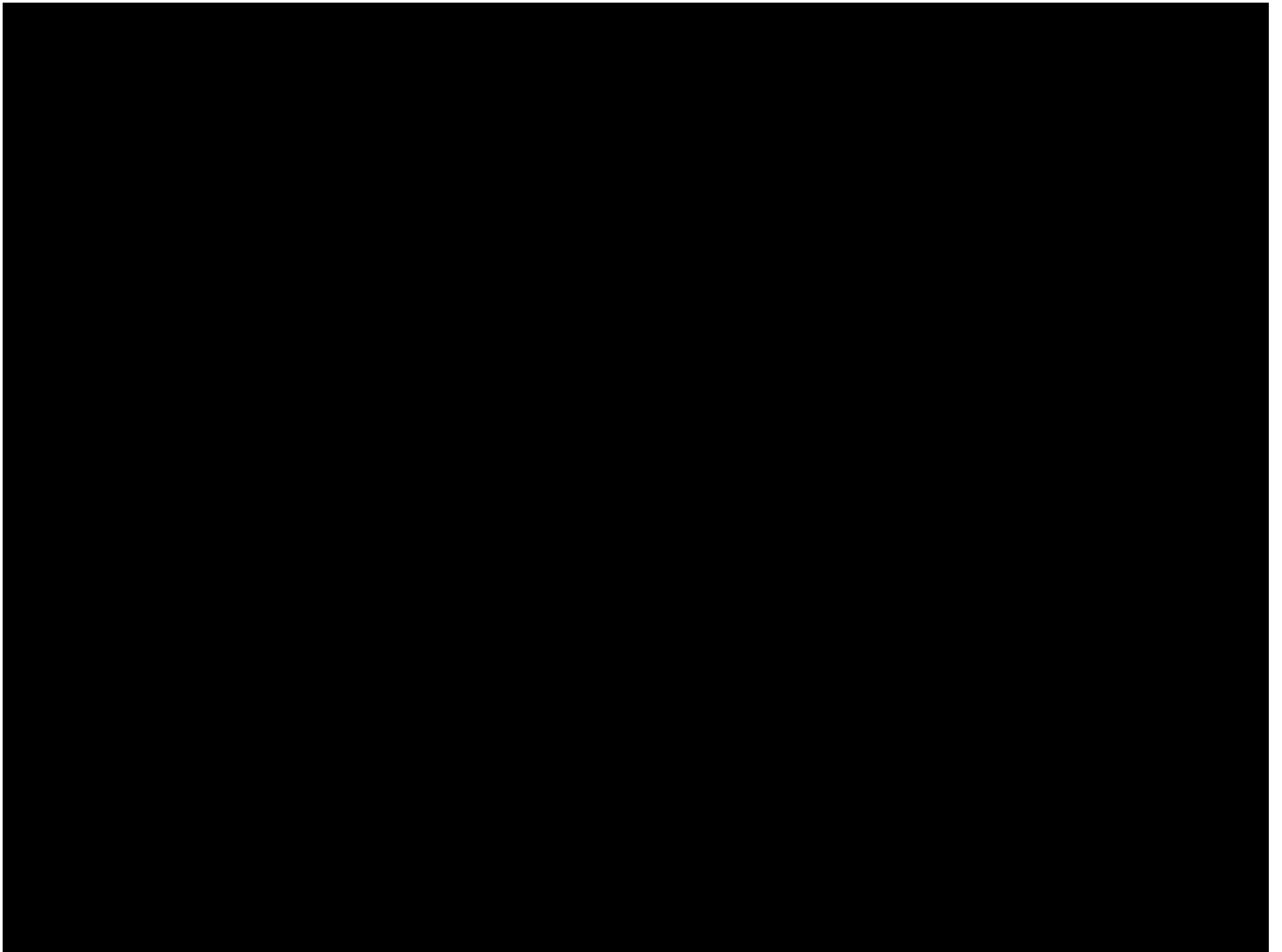


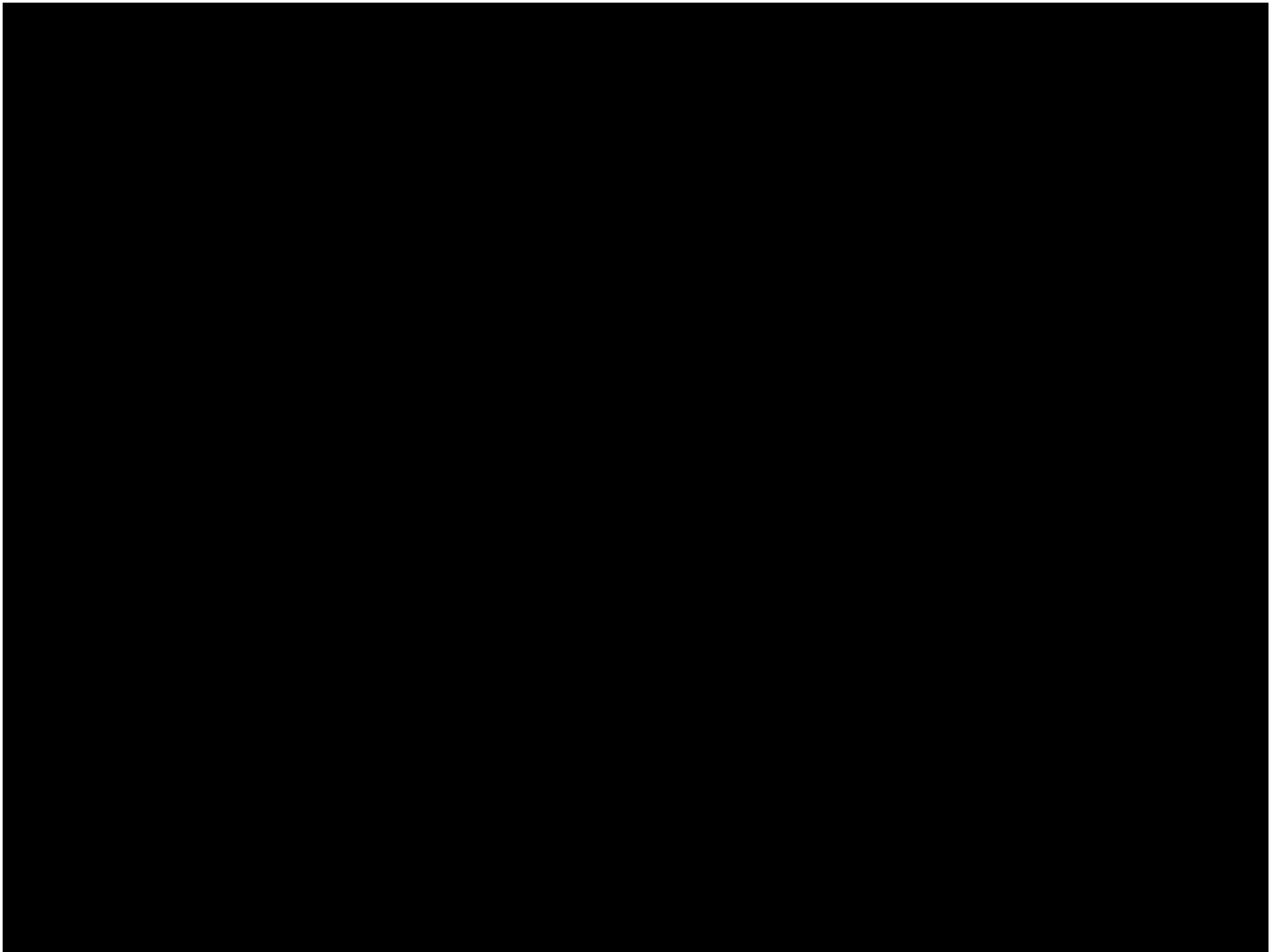


Corner stitch

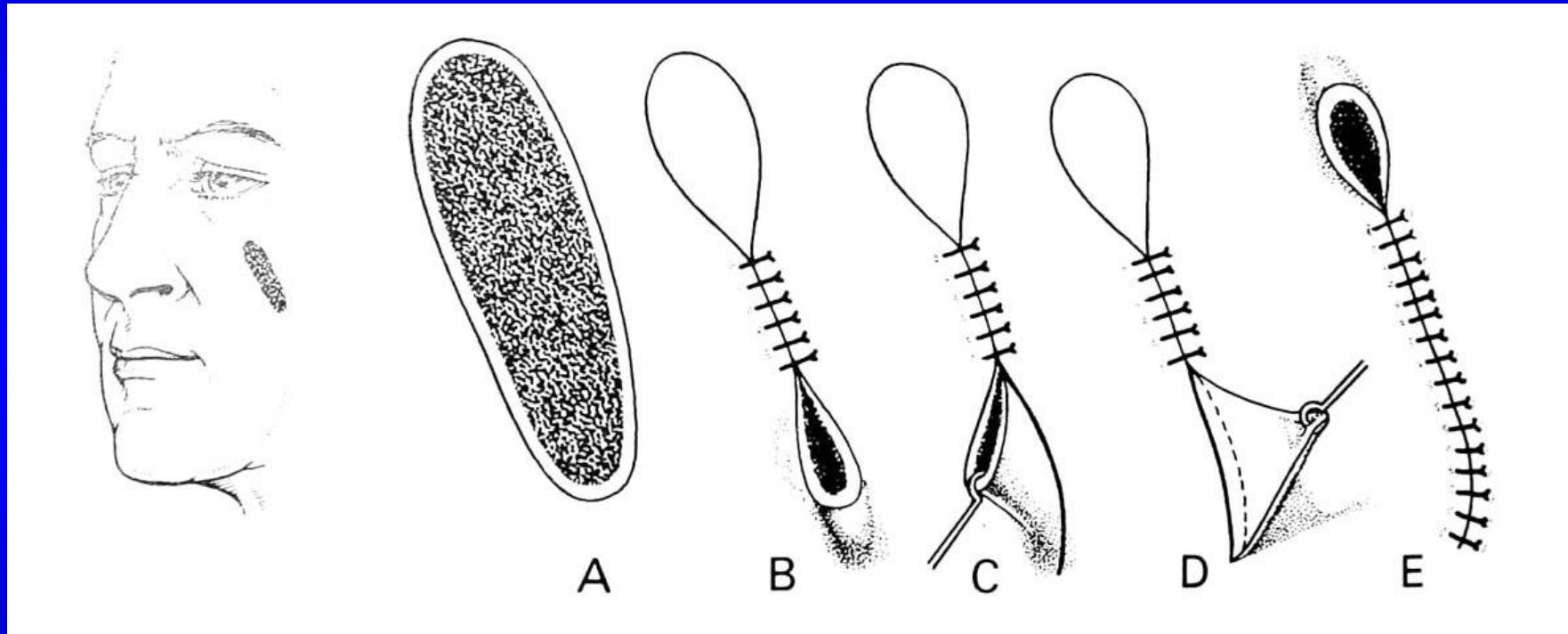
To avoid tip necrosis from suture strangulation

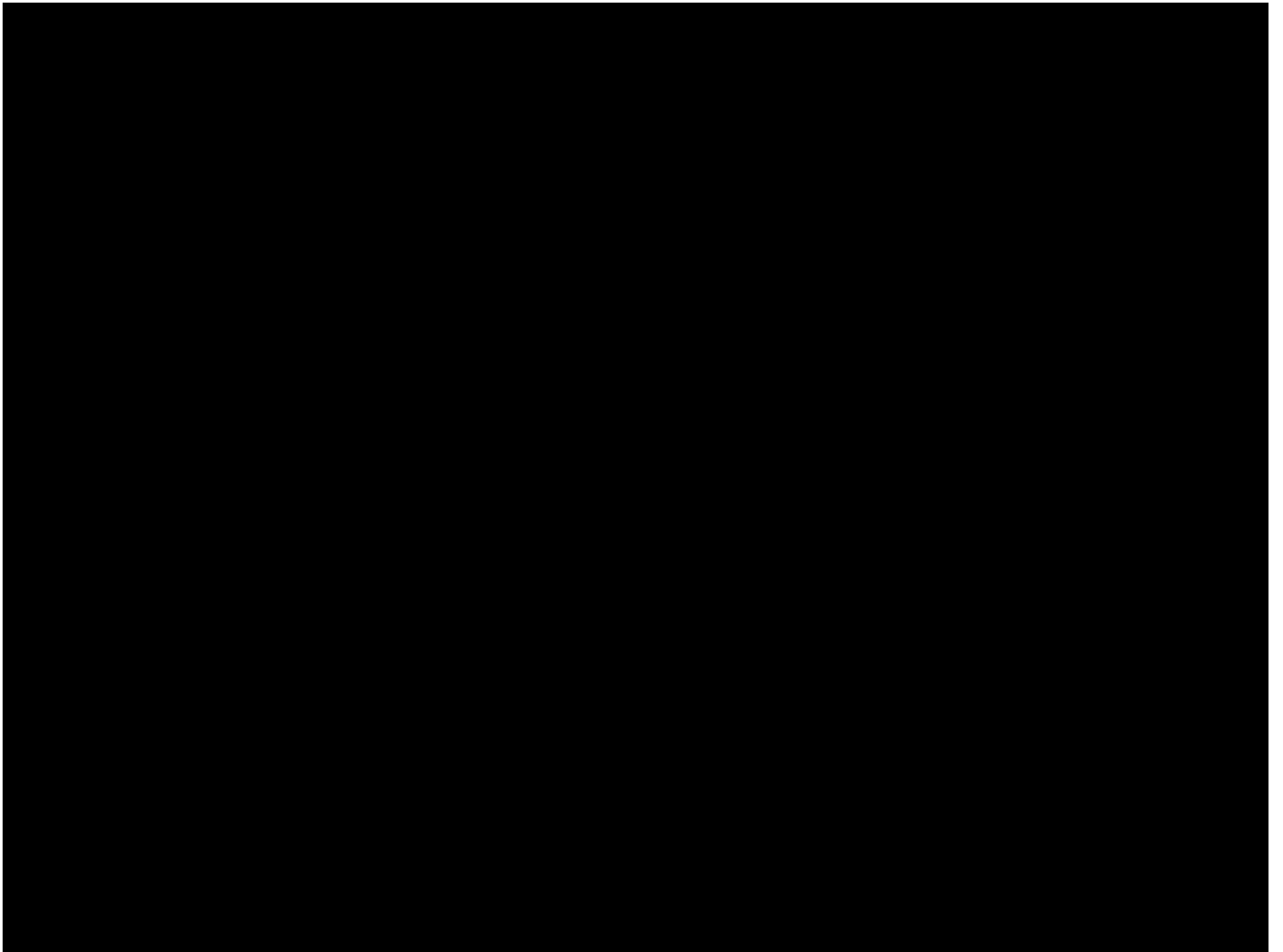


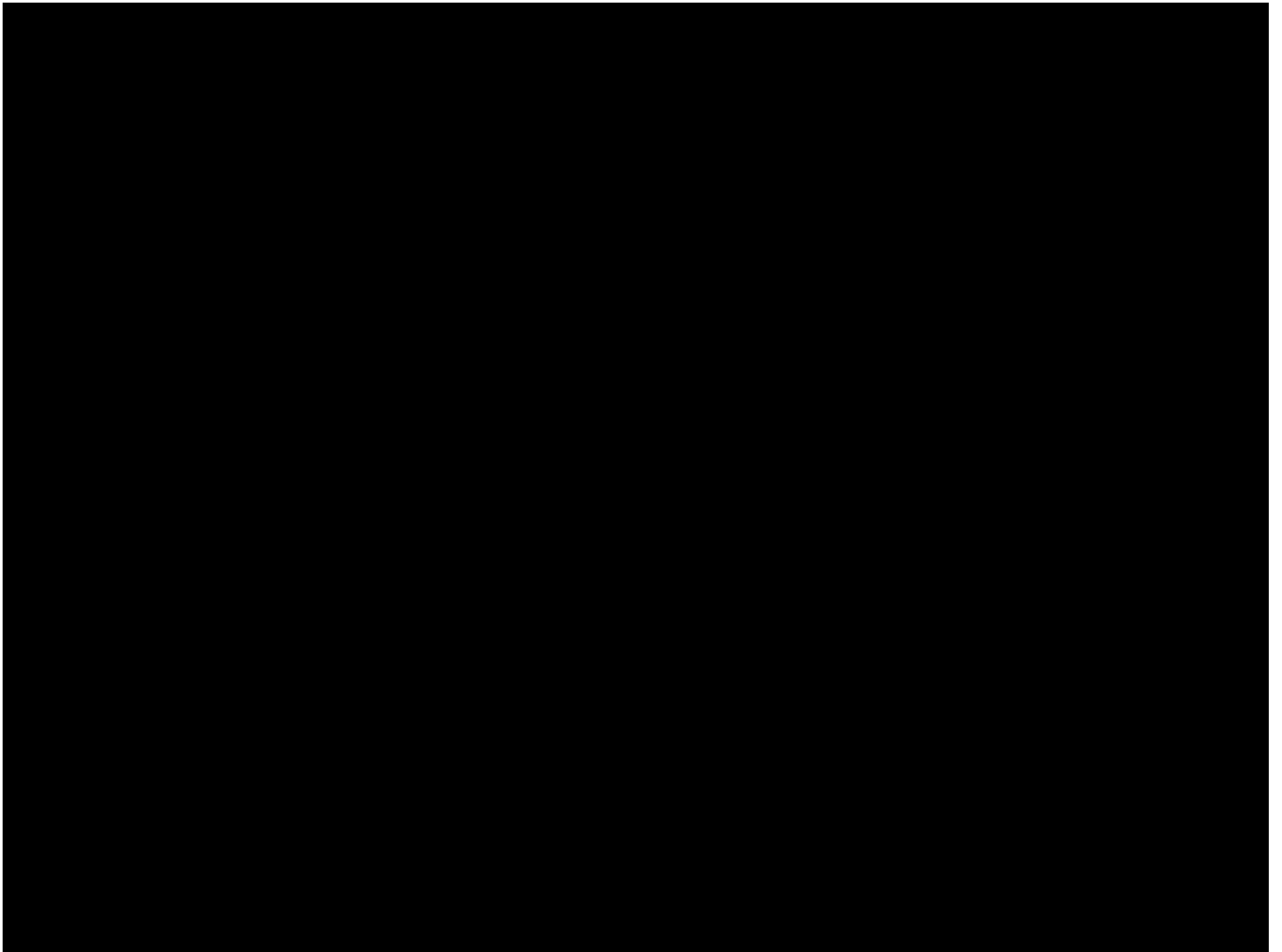




The "Dog Ear"







Rhomboid Flap



Rhomboid Flap



Rhomboid Flap



PRACTISE

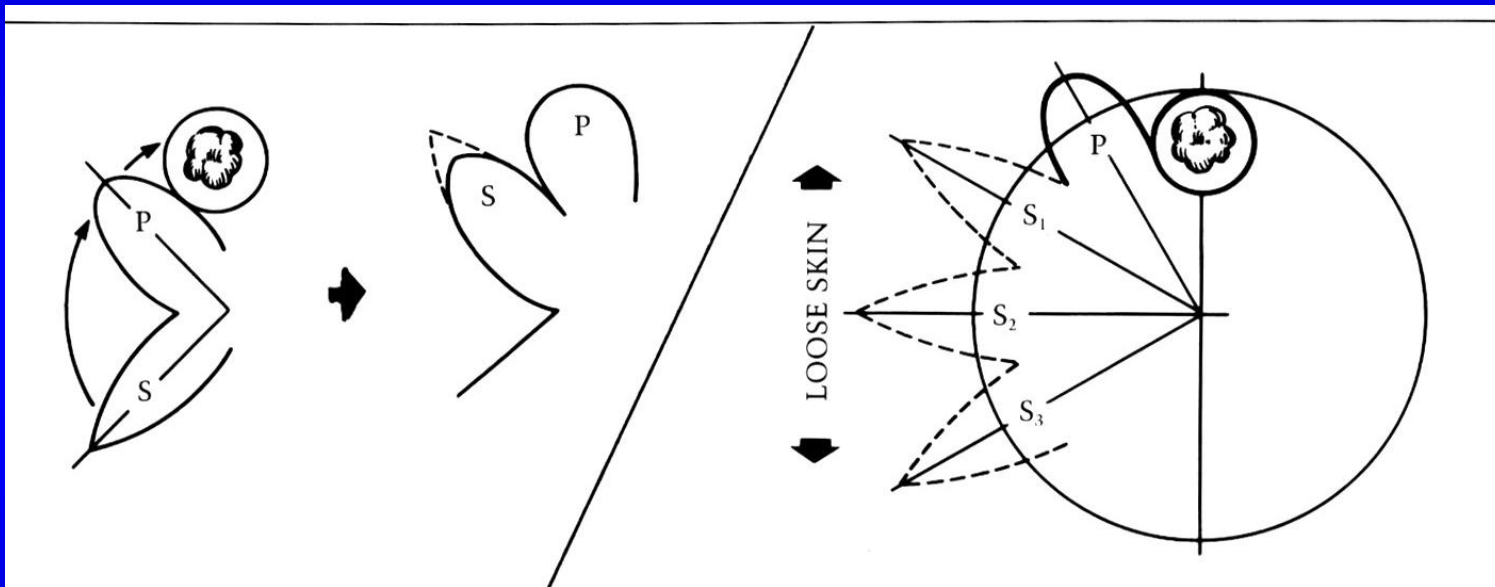
Rhomboid Flap

Local Flaps...

Bilobed Transposition Flaps

Local Flaps...

Bilobed Transposition Flaps



QuickTime™ and a
decompressor
are needed to see this picture.

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decompressor
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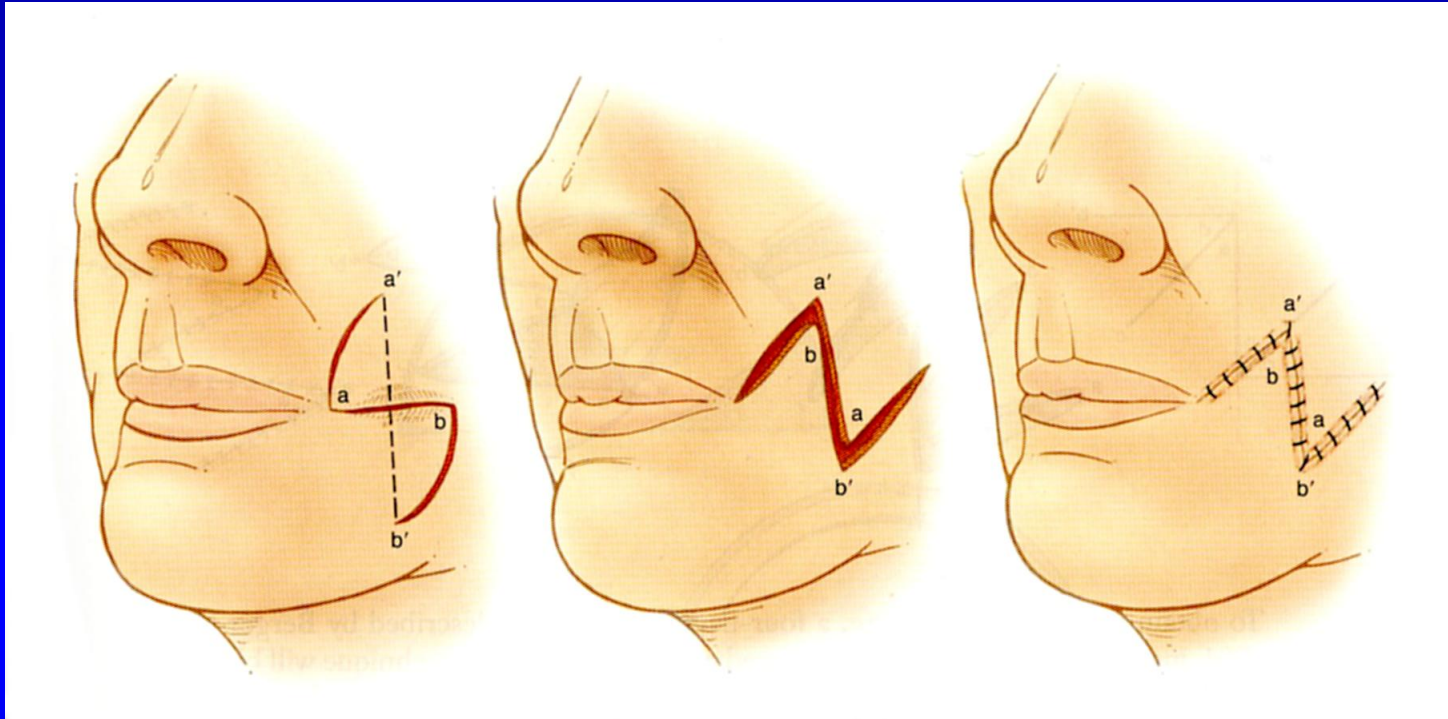
QuickTime™ and a decompressor are needed to see this picture.

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Z-plasty Flaps (double transposition)



A Z-plasty:

- *Lengthens a contracted scar*
- *Changes direction of a scar*
- *Relies on the movement of surrounding tissue*

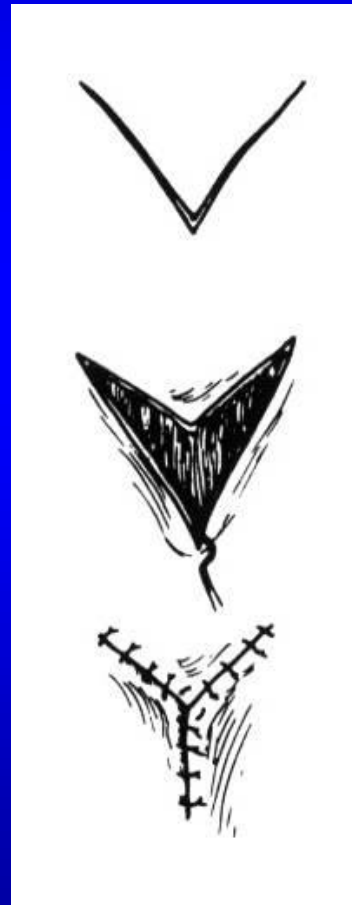
PRACTISE

Z-plasty Flap

(double transposition)

Advancement Flap

V/Y Flap



Advancement Flap

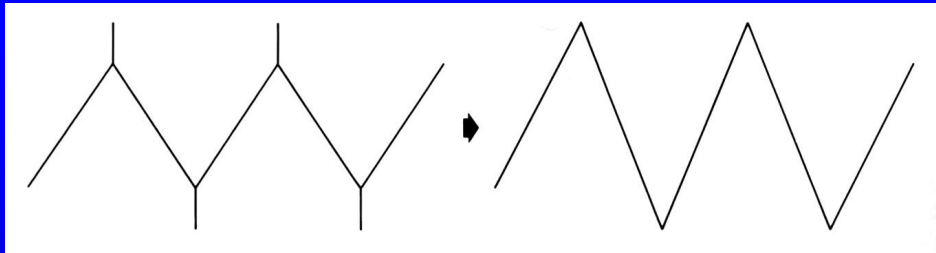
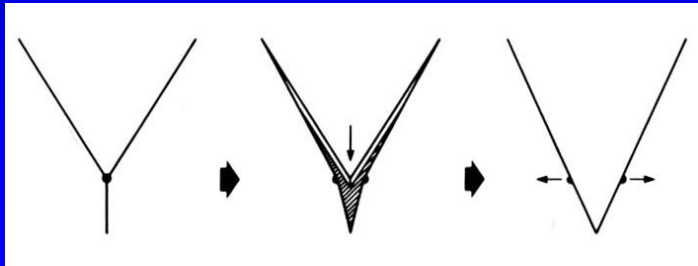




Image courtesy of Glenn Bartlett



Image courtesy of Glenn Bartlett



Image courtesy of Glenn Bartlett



Image courtesy of Glenn Bartlett

Local Flaps -The Face

- Forehead = small horizontal ellipse, large vertical ellipse, advancement flap or graft
- Temple = Transposition flap or graft
- Cheek = Rotation flap, Transposition flap, occasional Advancement flap
- Eyelids = Graft
- Nose = Graft or Advancement flap
- Upper Lip = Small ellipse or graft
- Lower Lip = Wedge excision

PRACTISE

V/Y Advancement

Flap

Precautions for Flaps

Reasons for Flap Failure

Problem	Cause
Using a small flap to fill a big hole	Design fault
Hematoma	Technical error
Suturing the wound under tension; failing to use a back cut; making a pedicle too short	All technical errors
Damaging the blood supply	Technical error
Making the flap extend outside its blood supply	Design fault
Failing to consider previous therapy, such as old scars or areas that have been irradiated	Design fault

Procedures available for wound closure

1. Secondary intention
2. Direct closure or sliding flaps (elliptical excision)
3. Local flaps

- Rotation*

- Transposition*

 - Rhomboid

 - Z-Plasty

 - Bi-lobed

 - Simple Transposition + skin graft secondary defect

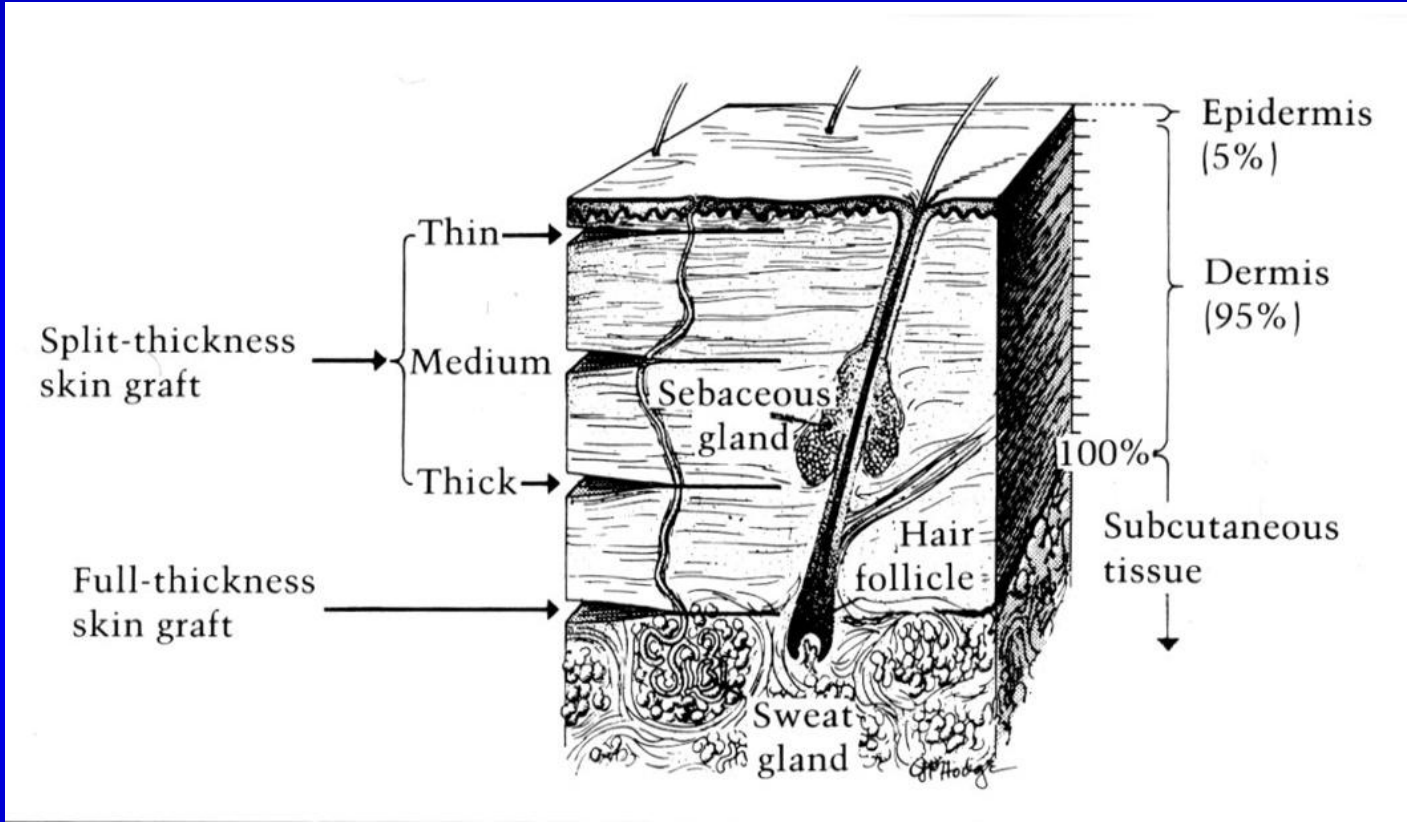
- Advancement*

4. Skin Grafts

- Split thickness*

- Full thickness*

- Composite*



Graft - Advantages

- Applicable to almost any defect/situation
- No “Burnt Bridges”
- Good cosmesis in certain areas
- No undermining required
- Relatively simple

Graft -Disadvantages

- Donor site
- Time consuming
- Some expertise required
- Anticipated graft failure

Remember...

A skin graft is skin totally separated from its blood supply and transposed to fill a defect, where it survives by developing a new blood supply.

- Split-thickness
- Full-thickness (*Wolfe Graft*)

Post auricular

Supra-clavicular

Groin

Post auricular Wolfe Graft



Small, illegible text block.

Small, illegible text block.

Small, illegible text block.





Quantum Theory
of the
Electron

Quantum Theory
of the
Electron

Quantum Theory
of the
Electron



QuickTime™ and a decompressor are needed to see this picture.

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Conclusion

Refine your technique of skin/mole excision and direct closure in the correct line (*wrinkles at right angles to relaxed skin tension lines/Langers Lines Flint Circle*) for improved results and happy patients.

Only use a flap or graft if absolutely necessary and you are competent to do so.