



# HAIR RESTORATION SURGERY REVIEW

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SEATTLE, WA

THE AMERICAN BOARD OF COSMETIC SURGERY  
REVIEW COURSE





# DISCLOSURE OF CONFLICTS OF INTEREST

E. ANTONIO MANGUBAT, MD

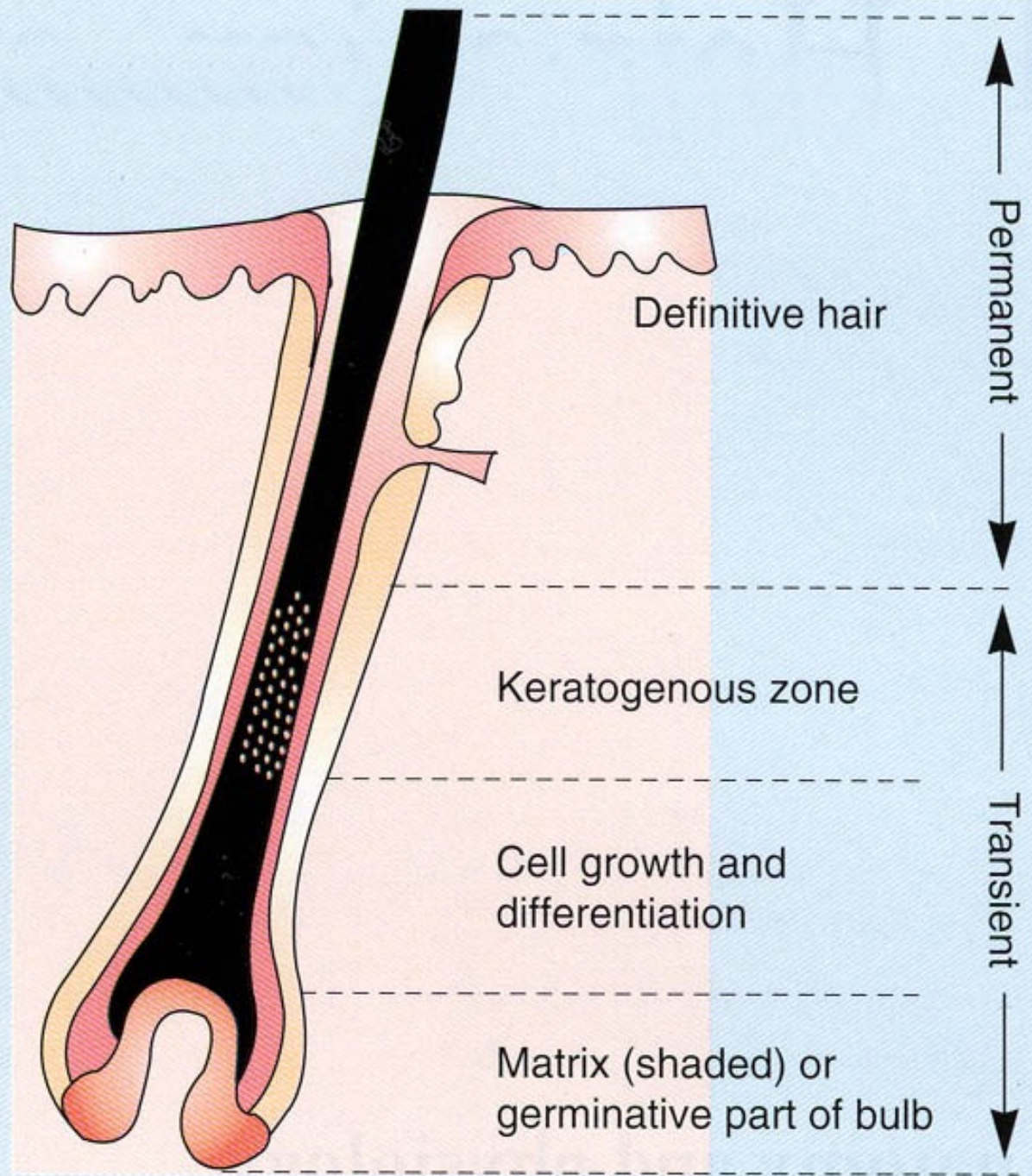
- NONE FOR THIS LECTURE
- 



John misunderstood  
the ad and joined  
"The Hare Club for Men".

# OVERVIEW

- NOT A REVIEW OF CURRENT STATE OF THE ART
- ANATOMY AND PHYSIOLOGY
- CLASSIFICATION OF BALDNESS
- MEDICAL THERAPY
- SURGICAL TECHNIQUE
- HAIR RESTORATION PROCEDURES
  - TRANSPLANTATION
  - SCALP FLAPS, LIFTS, & REDUCTIONS
- CASE REVIEW





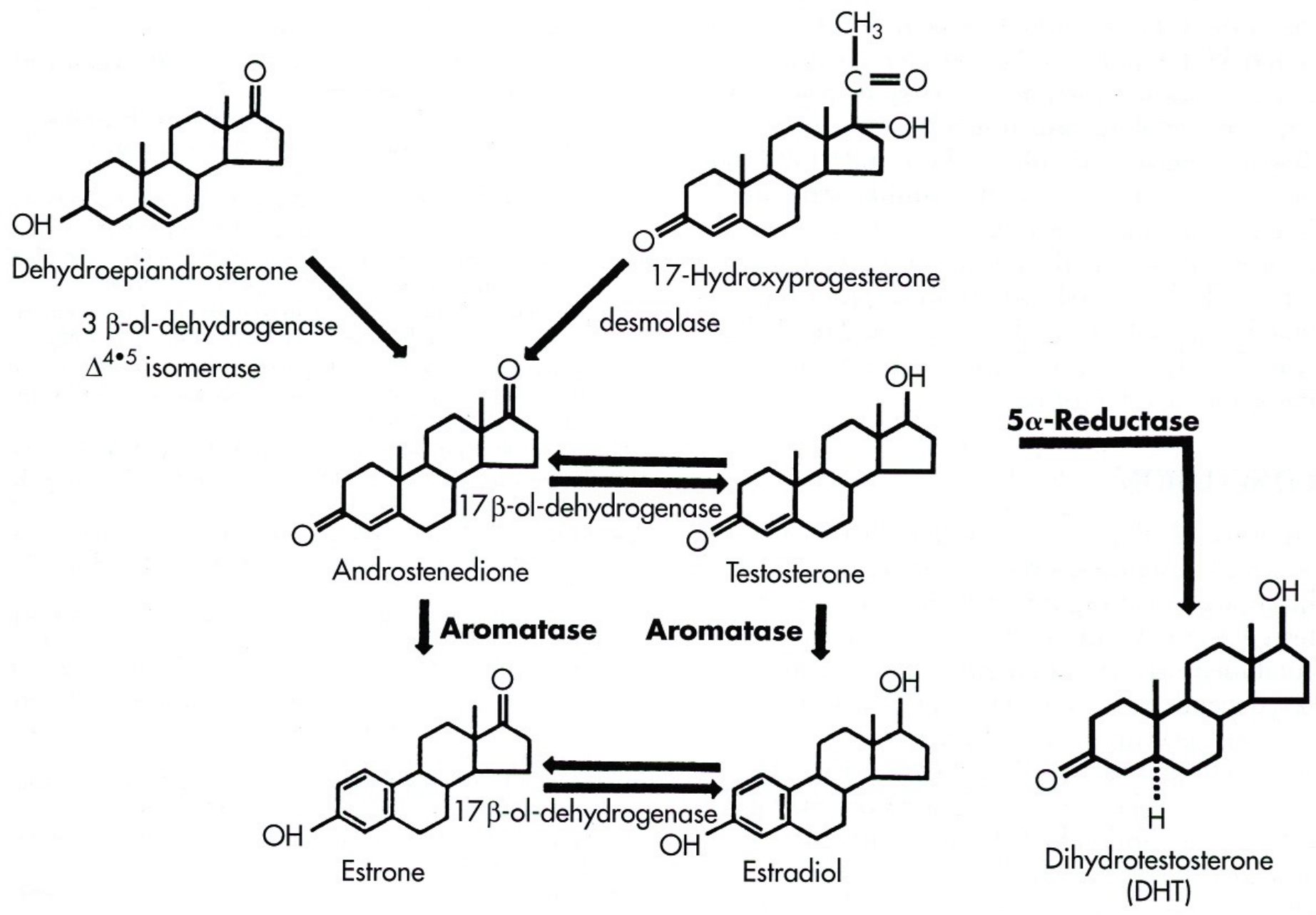
# MALE PATTERN BALDNESS

- 400 BC HIPPOCRATES NOTED:
  - “EUNUCHS ARE NOT SUBJECT TO GOUT NOR DO THEY BECOME BALD”
- 1949 JAMES B. HAMILTON, ANATOMIST
  - CONFIRMED HIPPOCRATES
  - EUNUCHS + ANDROGEN = BALDNESS
  - LEVEL OF ANDROGEN  $\neq$  EXTENT OF BALDNESS
  - PRESENCE OF ANDROGEN CAN CAUSE MPB

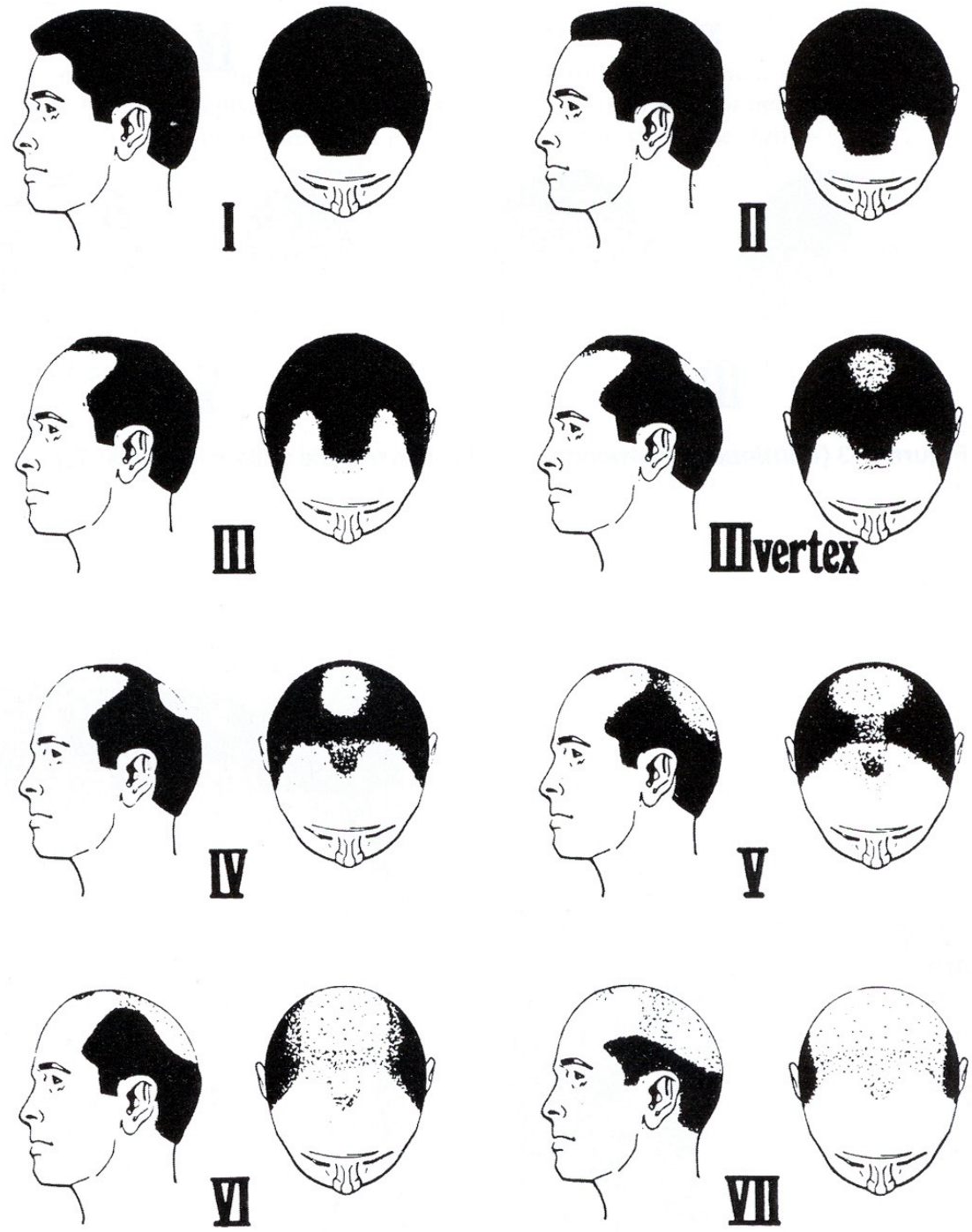
# PHYSIOLOGY OF HAIR LOSS

- MULTIFACTORIAL, POLYGENIC
- ANDROGENICALLY MEDIATED
- TESTOSTERONE  $\xrightarrow{5-\alpha \text{ REDUCTASE}}$  DIHYDROTESTOSTERONE
- TESTOSTERONE  $\Rightarrow$  PUBIC, AXILLARY HAIR
- DHT  $\Rightarrow$  MPB, FACIAL HAIR
- PROGRESSIVE MINIATURIZATION OF FOLLICLE
- PROGRESSIVELY SHORTER ANAGEN PHASE (PERIODS OF GROWTH)

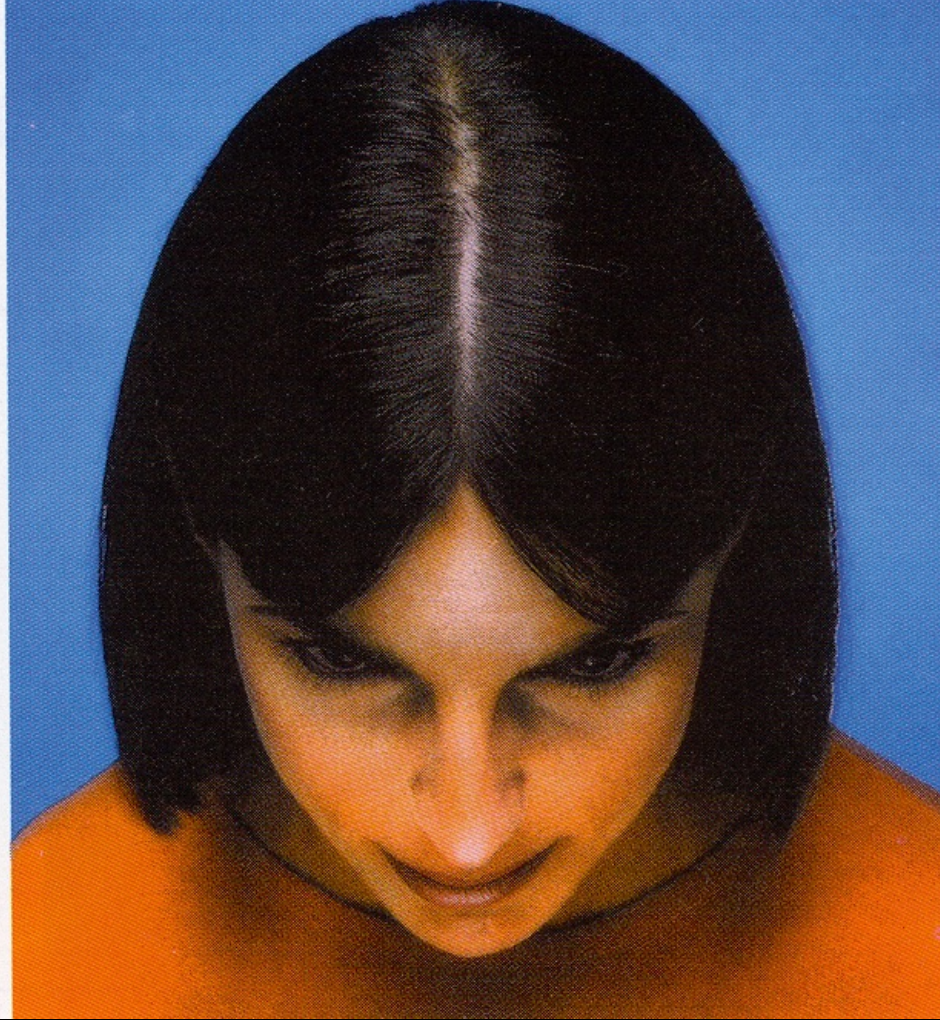
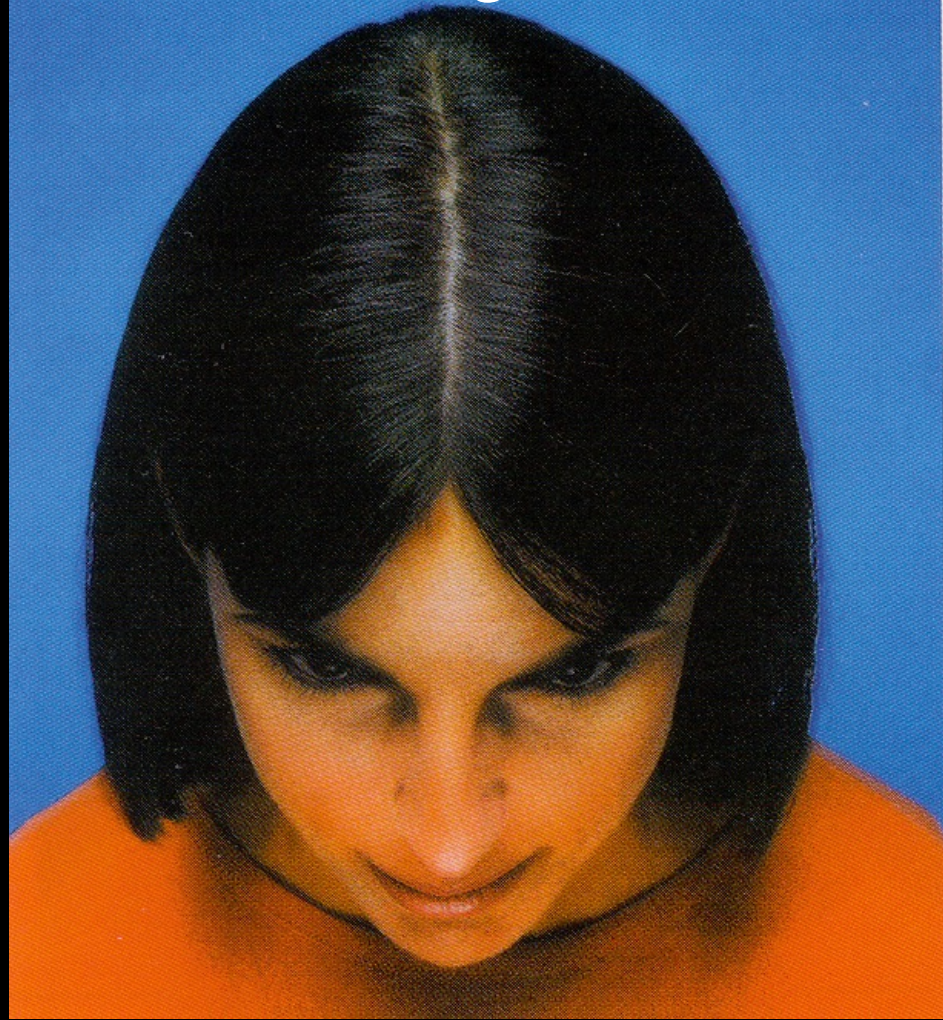




# NORWOOD/HAMILTON CLASSIFICATION OF MALE BALDNESS

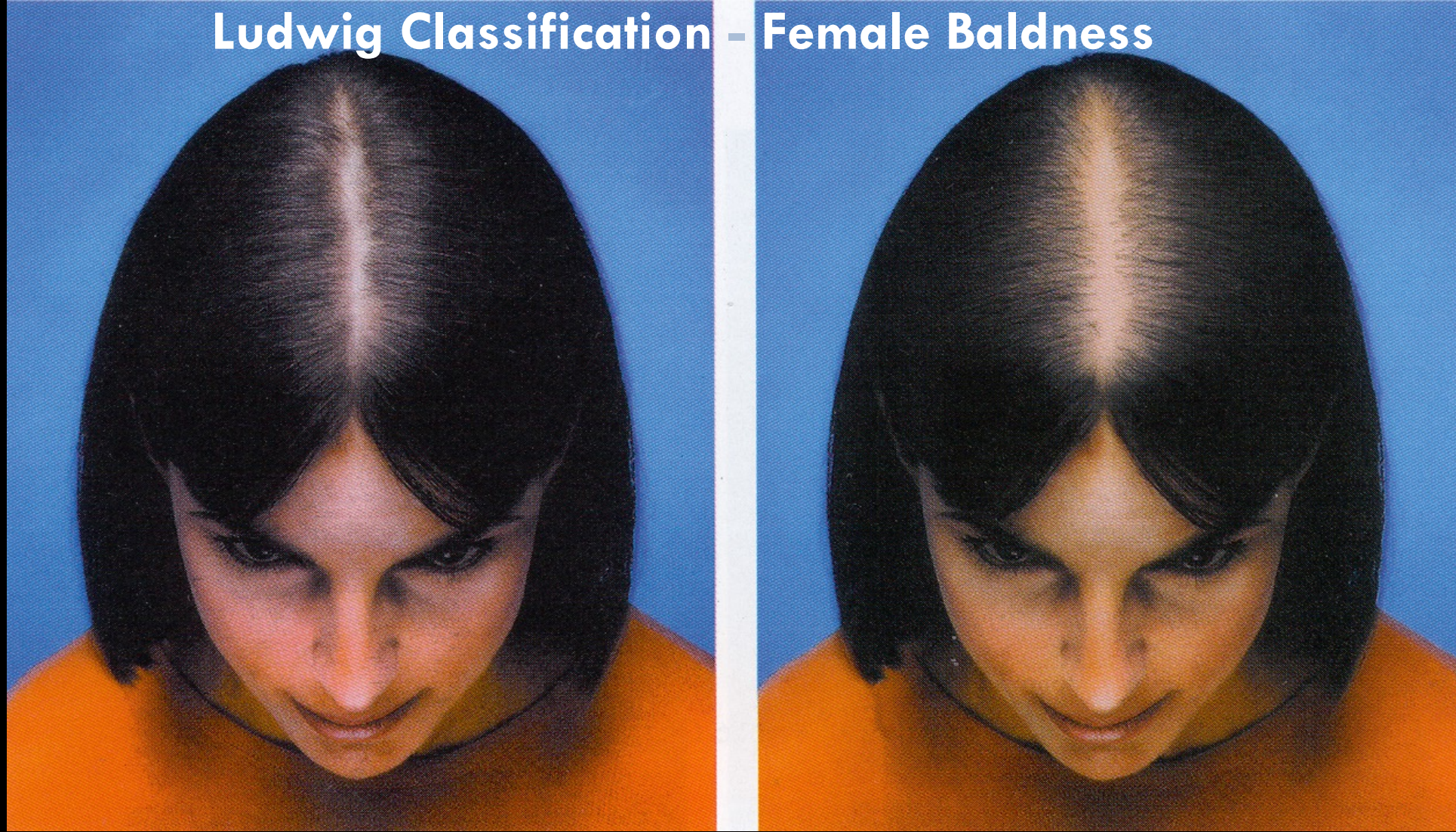


Ludwig Classification - Female Baldness



NORMAL & FINE HAIR

Ludwig Classification - Female Baldness



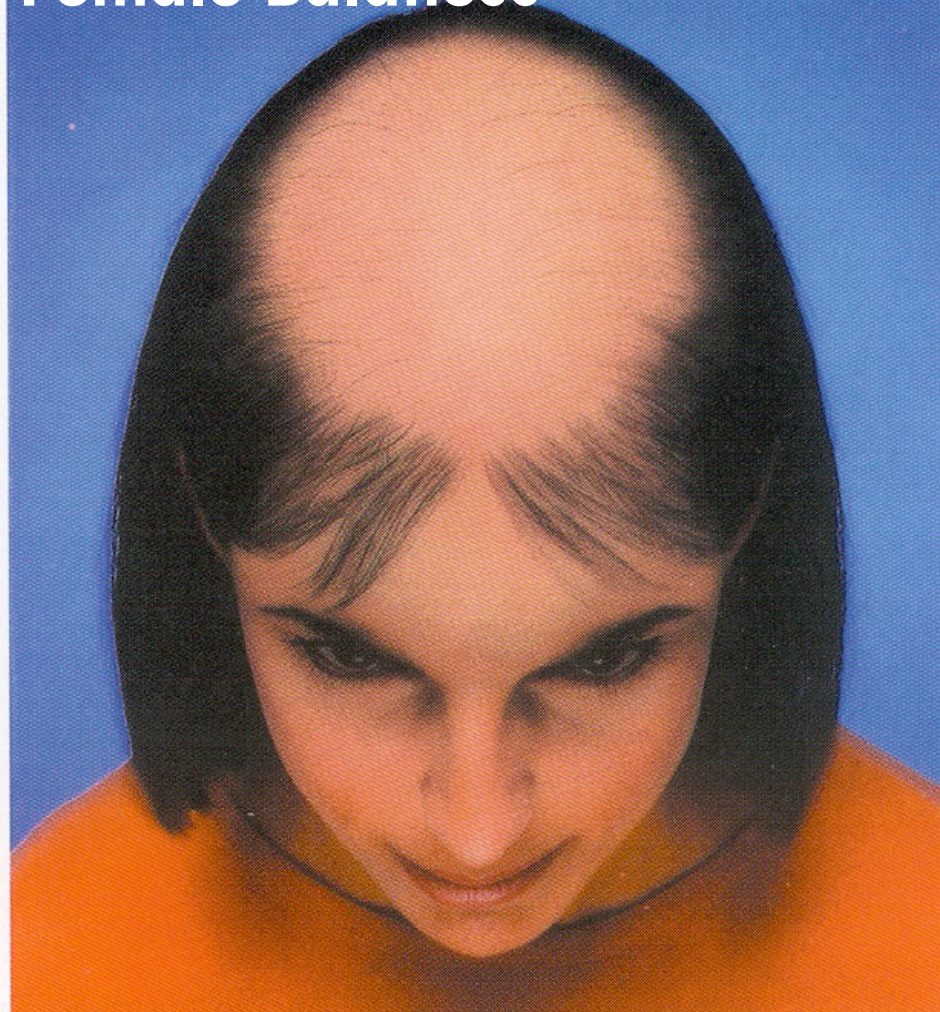
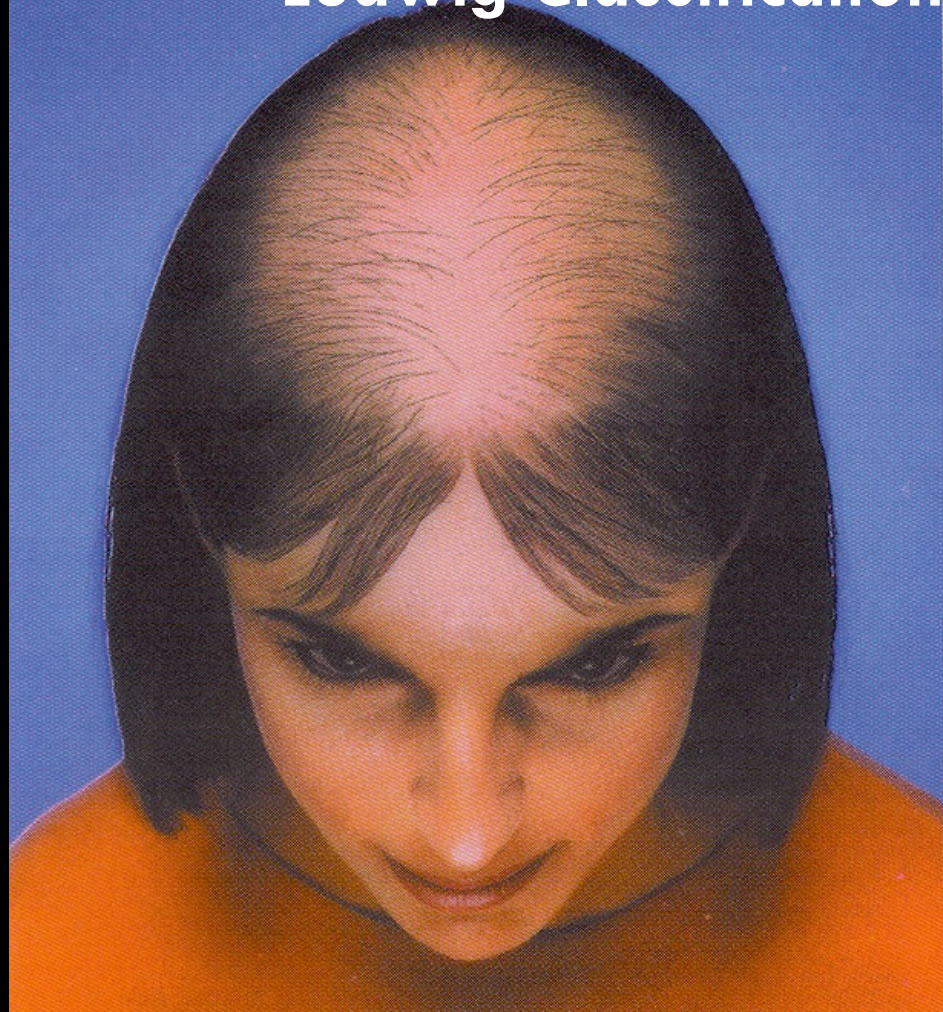
LUDWIG I

Ludwig Classification - Female Baldness



LUDWIG II

Ludwig Classification - Female Baldness



LUDWIG III

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The main title is centered in the upper half of the slide.

# HAIR RESTORATION SURGERY MEDICAL THERAPY

- ELIMINATE NEED FOR SURGERY
- CHANGE THE SUPPLY AND DEMAND EQUATION
- TOOL FOR THE HR SURGEON

# HAIR RESTORATION SURGERY

## MEDICAL THERAPY

- ROGAINE 2% AND 5%
- MECHANISM?
  - DIRECT EFFECT ON FOLLICLE
  - FOLLICLE DEPENDENT ON DRUG FOR GROWTH
  - OPENS K CHANNELS
  - PROLIFERATION/DIFFERENTIATION OF EPITHELIAL CELLS
  - VASODILITATION
- OTC & CHEAP \$10-\$15 FOR GENERIC




# HAIR RESTORATION SURGERY

## MEDICAL THERAPY

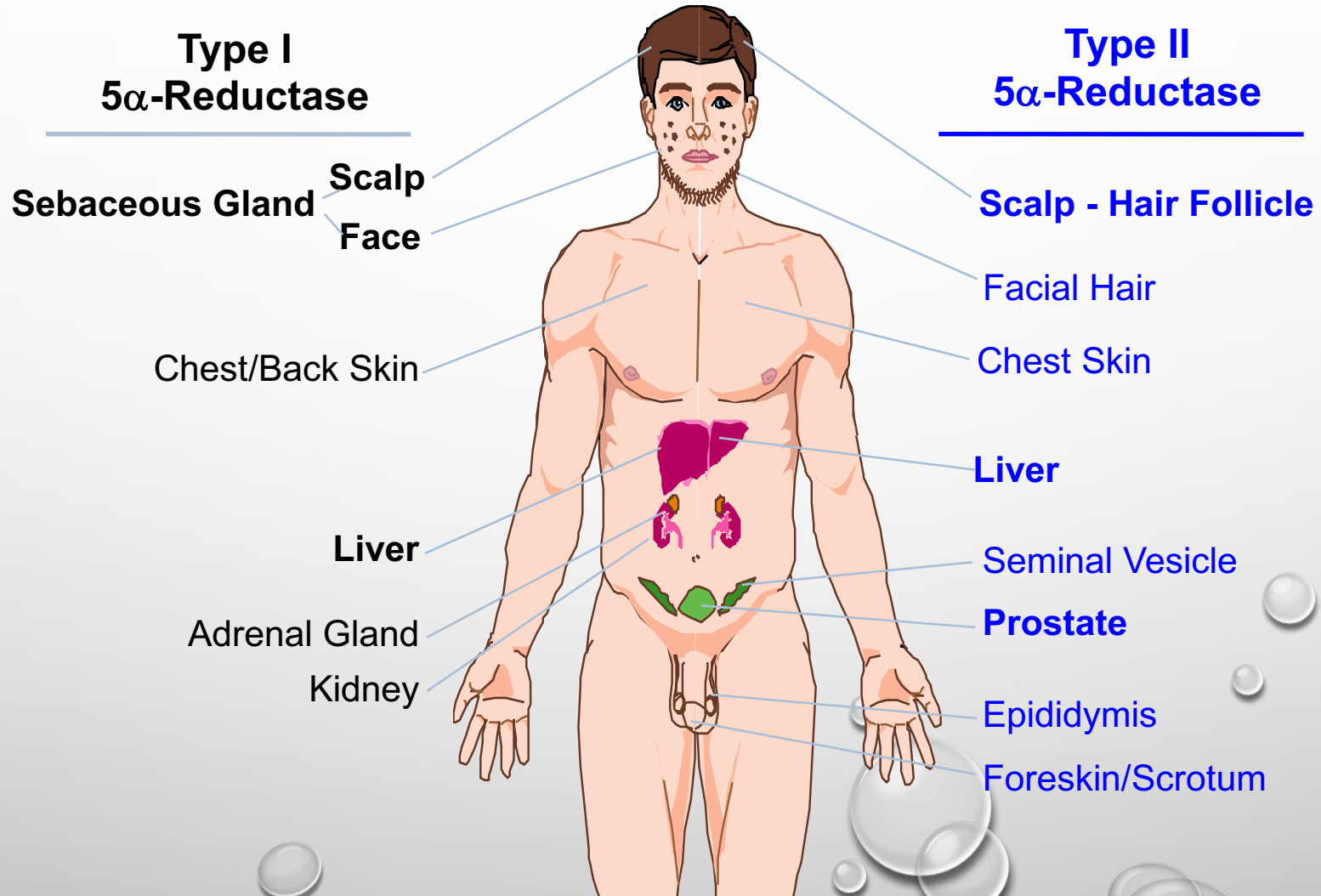
- FINASTERIDE (PROCEPIA, MERCK)
- TYPE II 5  $\alpha$ -REDUCTASE COMPETITIVE INHIBITOR OF TESTOSTERONE
- 65% REDUCTION OF DHT IN 24 HRS
- SMALL AMOUNTS IN SEMEN, SAFE
- SUBJECTIVE RESULTS IN 18-41 YO MEN
  - 30% OF CONTROLS FELT THEY HAD MORE HAIR
  - 50% OF FINASTERIDE TAKERS FELT THEY HAD MORE HAIR



# HAIR RESTORATION SURGERY MEDICAL THERAPY

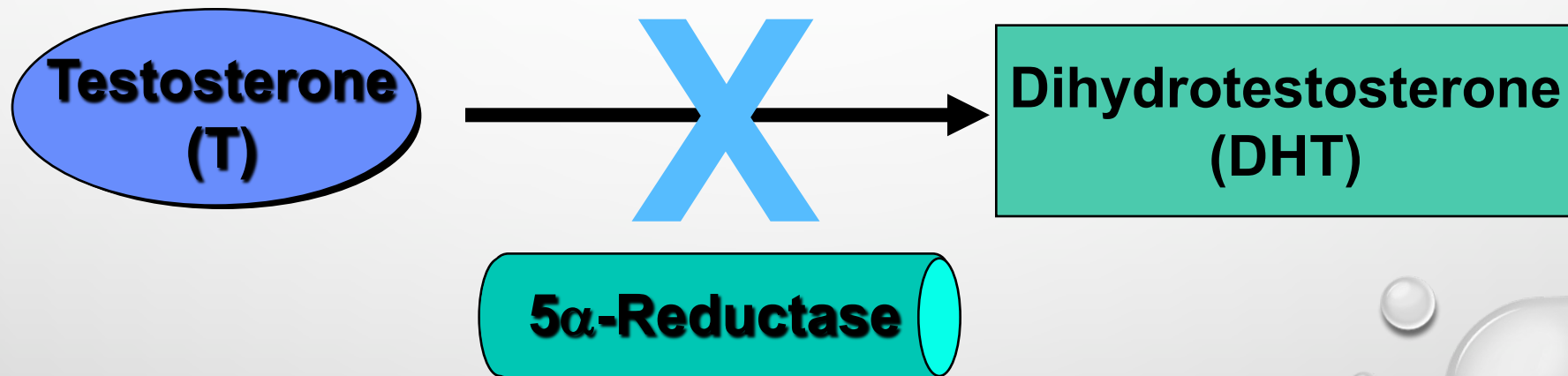
- DUTASTERIDE (AVODART) GLAXOWELLCOME
  - SIMILAR STRUCTURE TO FINASTERIDE
  - INHIBITS BOTH TYPE I & II 5  $\alpha$ -REDUCTASE ISOENZYMES
  - > 90% DHT REDUCTION IN 24 HRS
- 

# 5 $\alpha$ -REDUCTASE ISOENZYME ACTIVITY IN ADULT HUMAN TISSUES



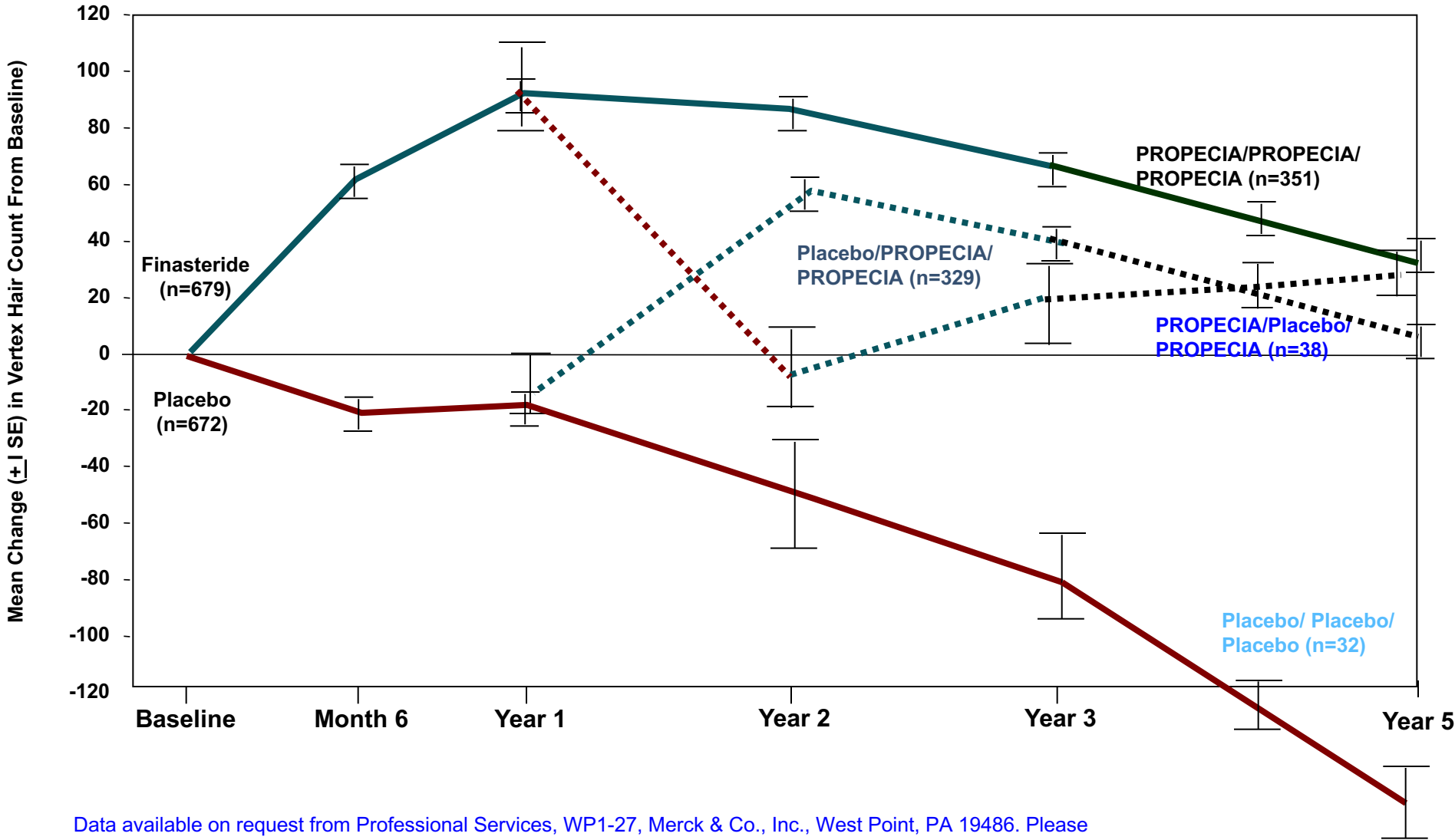
# 5 $\alpha$ -REDUCTASE

## Genetic Deficiency



Imperato-McGinley J, Guerrero L, Gautier T, et al. Steroid 5 $\alpha$ -reductase deficiency in man: An inherited form of male pseudohermaphroditism. *Science*. 1974; 186:1213-1215.


# MEAN CHANGE HAIR COUNT OVER 5 YEARS\*



Data available on request from Professional Services, WP1-27, Merck & Co., Inc., West Point, PA 19486. Please specify information package DA-PRP9(1).

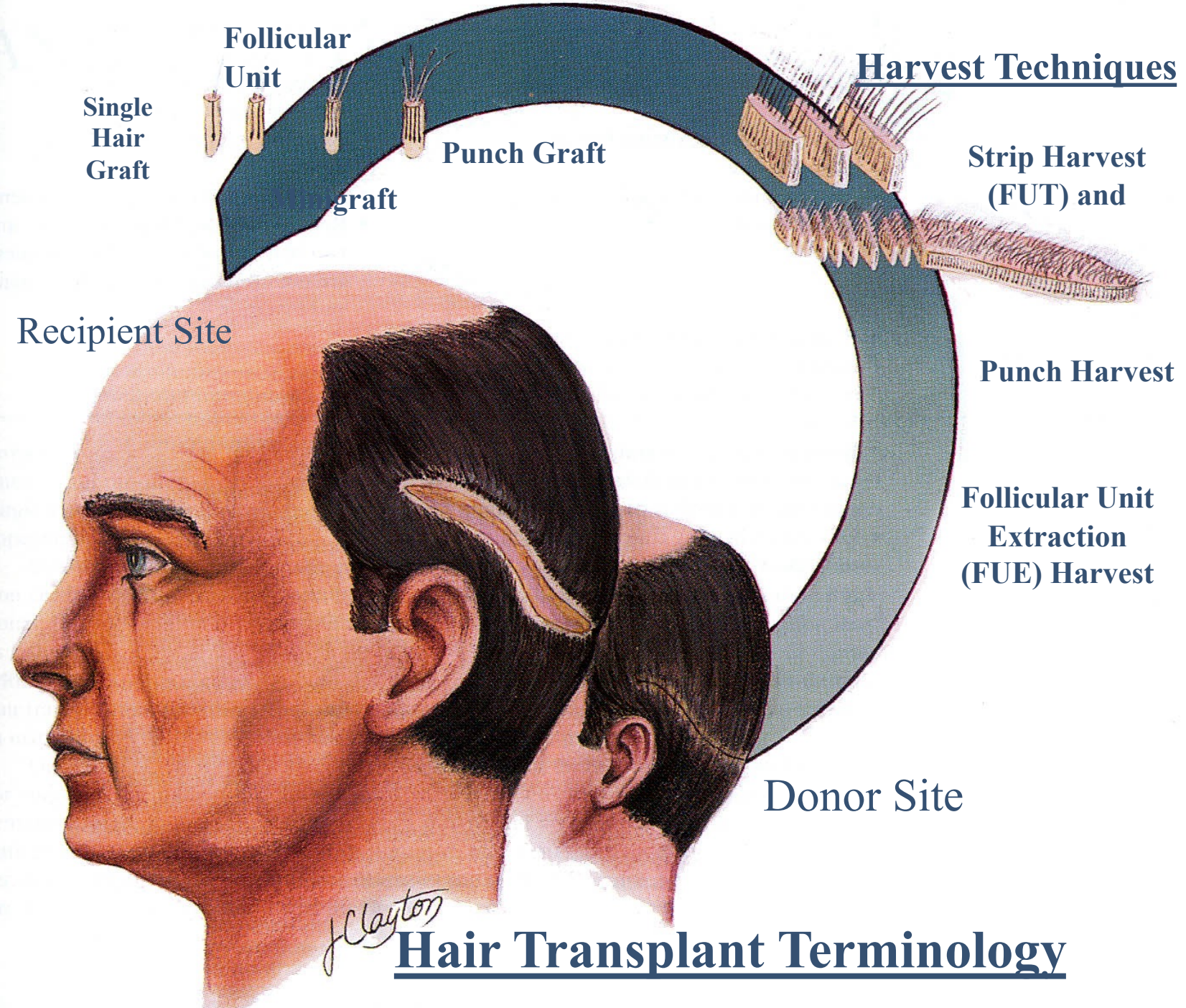
# PRESCRIBING FINASTERIDE 1 MG

- FINASTERIDE IS FOR USE IN MEN ONLY
- FINASTERIDE IS NOT INDICATED IN WOMEN OR CHILDREN
- FINASTERIDE IS CONTRAINDICATED IN WOMEN WHO ARE OR MAY POTENTIALLY BE PREGNANT
- WOMEN SHOULD NOT HANDLE CRUSHED OR BROKEN FINASTERIDE TABLETS WHEN THEY ARE OR MAY POTENTIALLY BE PREGNANT



# HAIR RESTORATION SURGERY HAIR TRANSPLANTION

- ROTATION OF INVENTORY
  - NOT CREATING MORE HAIR
- 



**Hair Transplant Terminology**



2<sup>nd</sup> Edition  
Volume 1

# HAIR TRANSPLANT 360

*for Physicians*




SAMUEL M LAM


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with added features at*

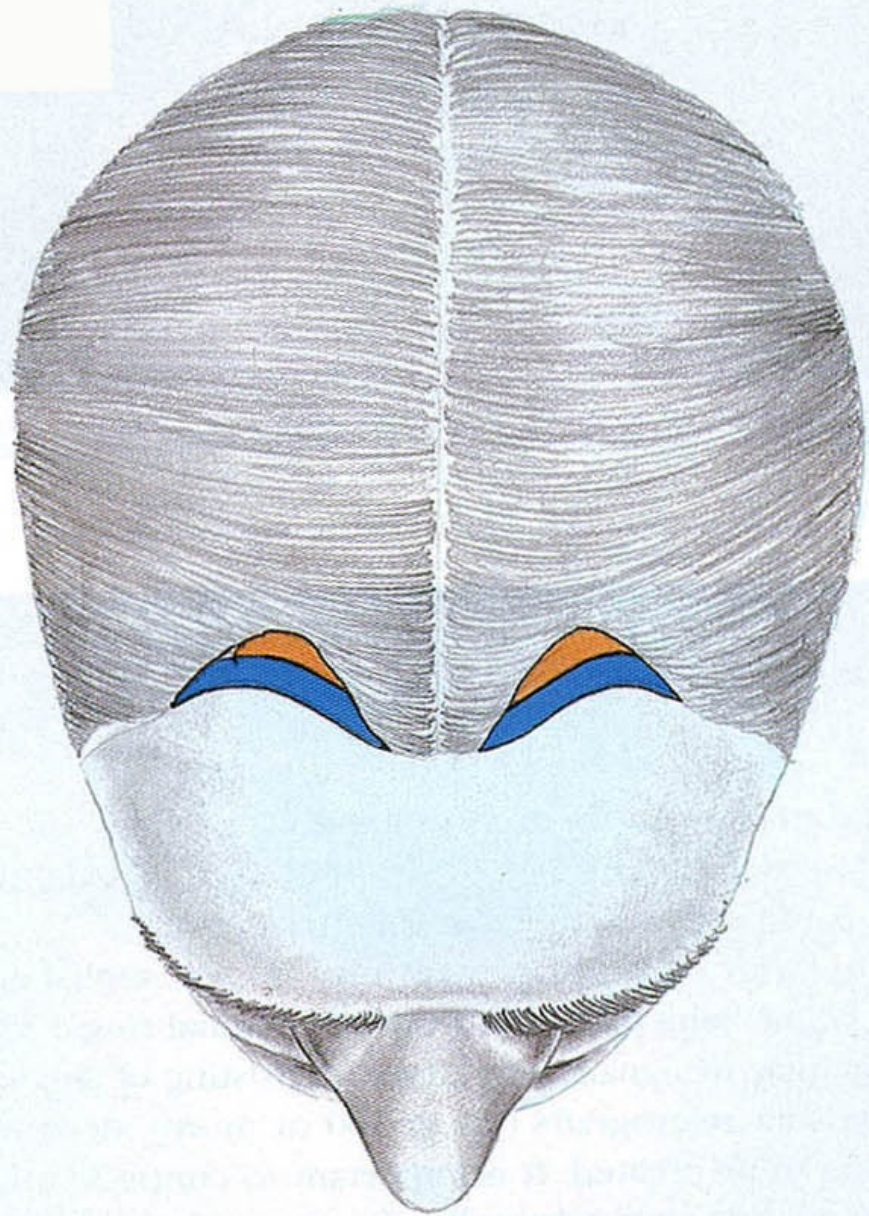
[emedicine360.com](http://emedicine360.com)

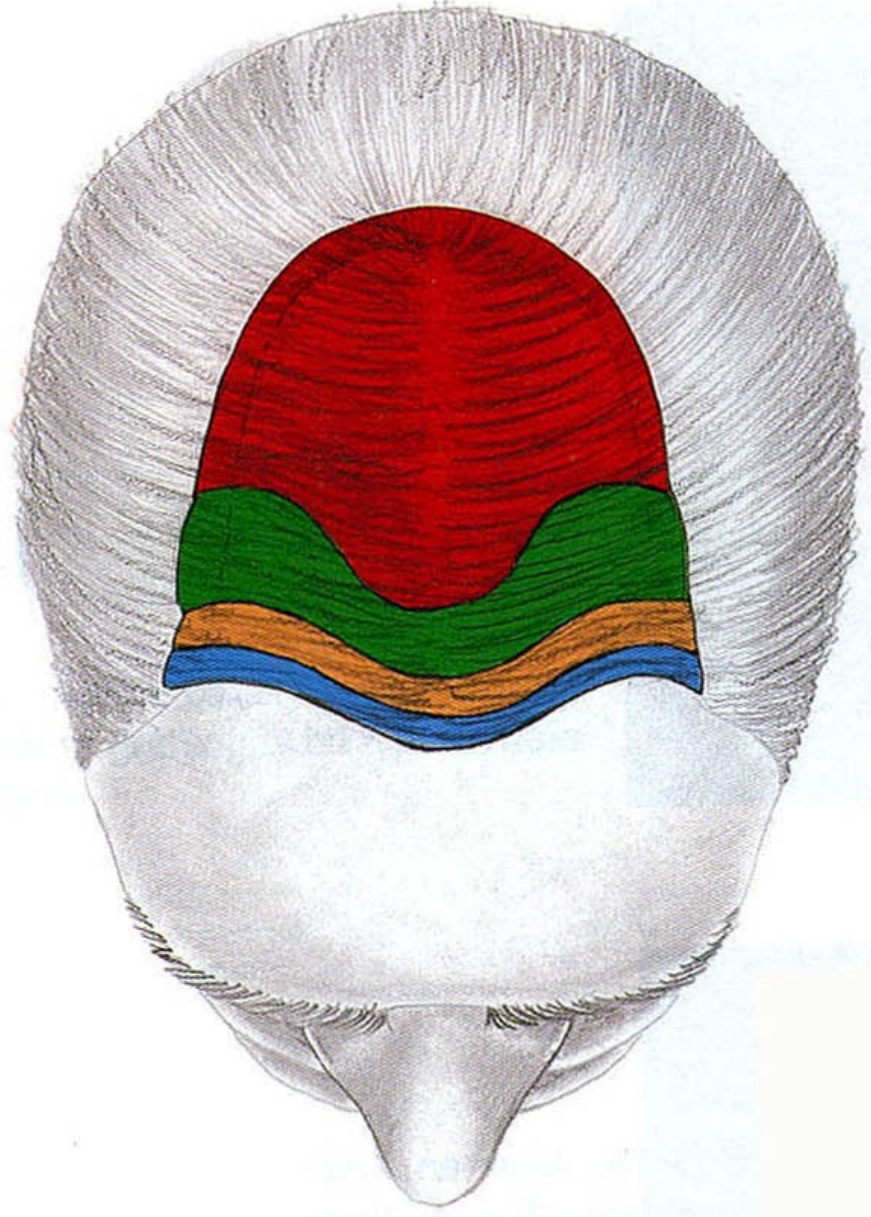




# HAIR RESTORATION SURGERY HAIR TRANSPLANTION PLANNING


- DONOR AMOUNT
  - RECIPIENT NEEDS
  - HAIRLINE DESIGN
  - SURGICAL PLAN
  - GRADIENT DENSITY TRANSITION ZONE
- 



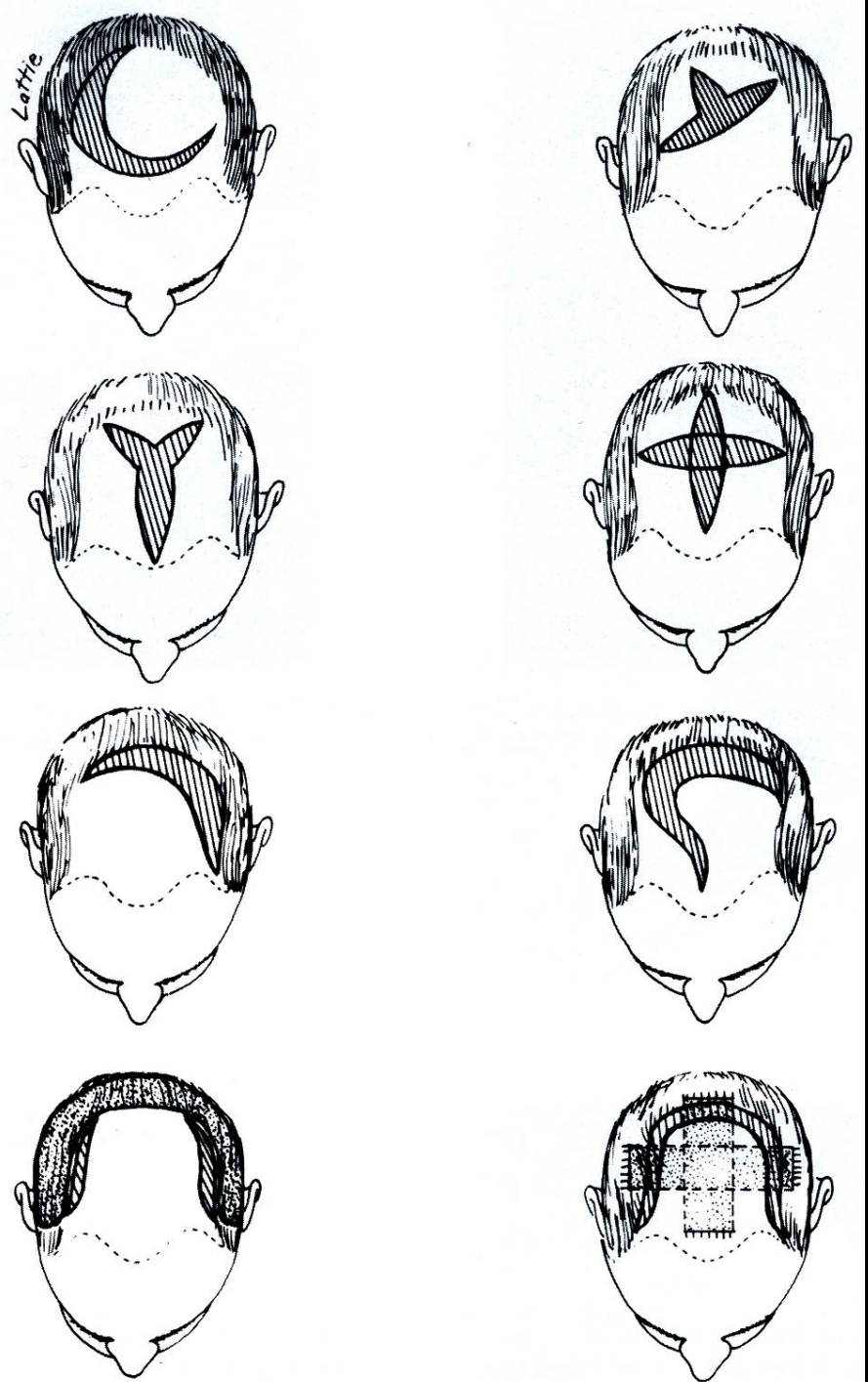


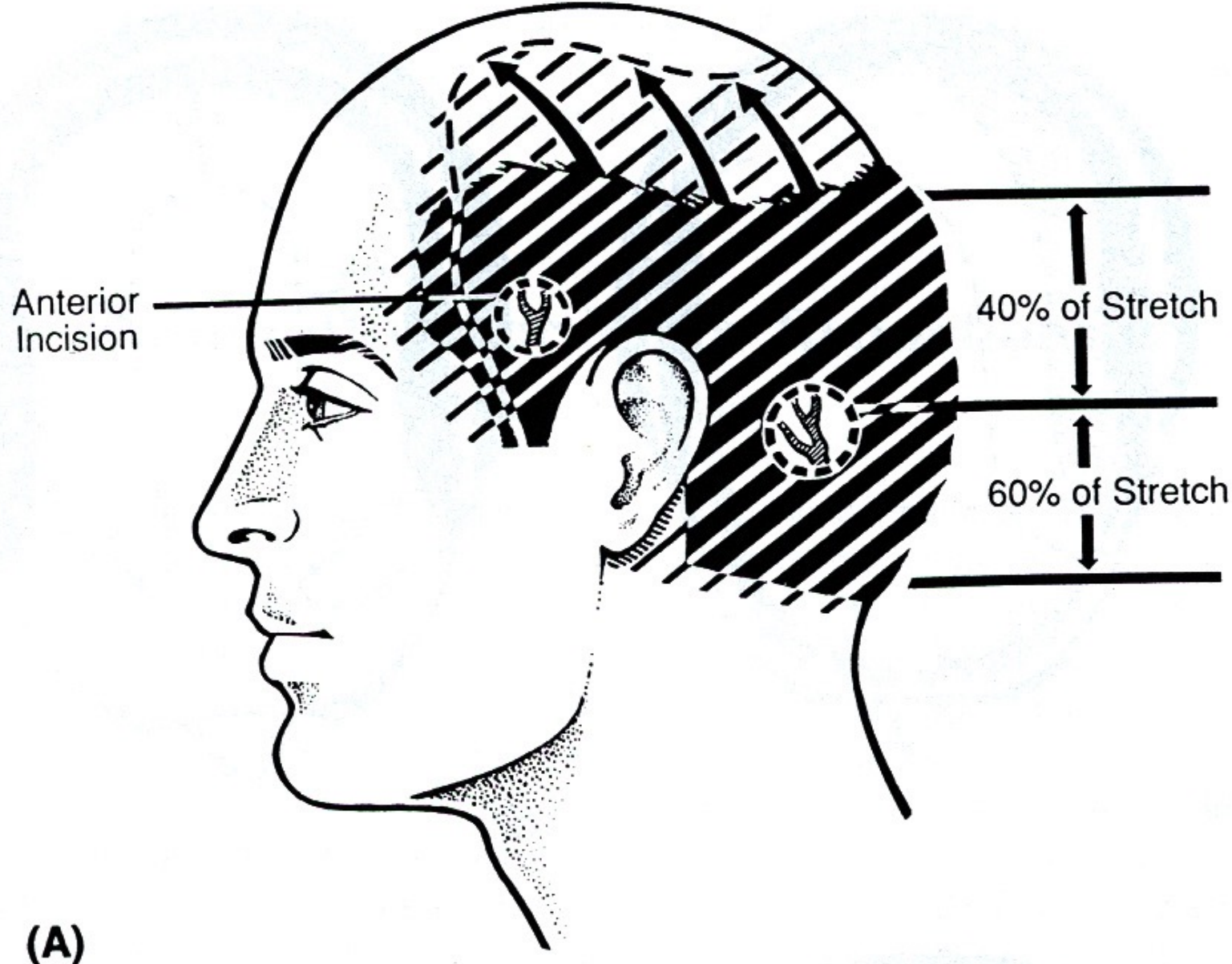


# HAIR RESTORATION SURGERY SCALP REDUCTION

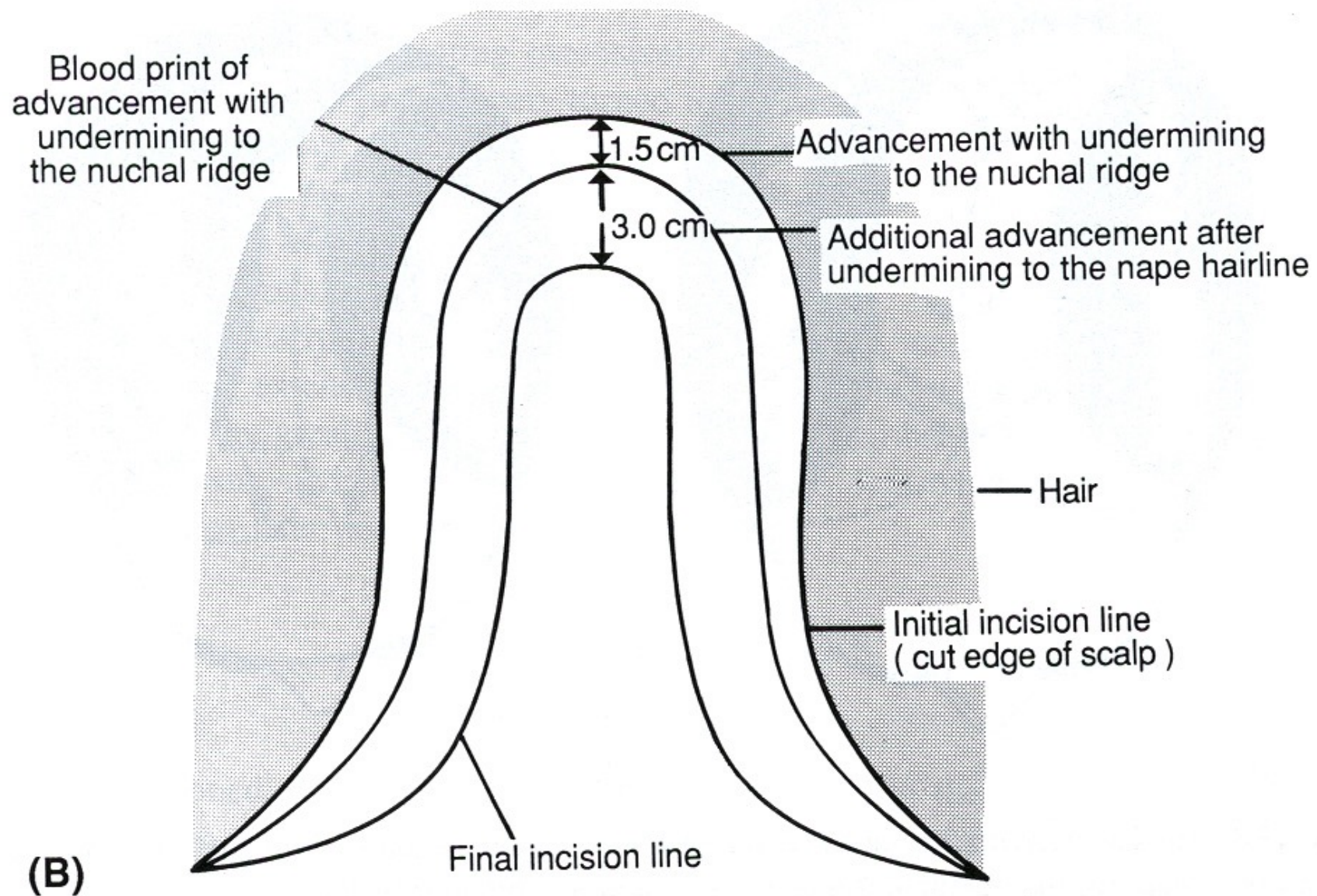
- GOAL = ALOPECIA REDUCTION
  - CONTINUED HAIR LOSS WITH AGE
  - POTENTIAL FOR SCARRING
  - PLANNING IS CRITICAL
  - PROCEDURES
    - SCALP REDUCTION
    - SCALP LIFTING
    - SCALP EXTENDER
- 

# SCALP REDUCTION





# EXTENSIVE SCALP LIFT



# Extensive Scalp Lift

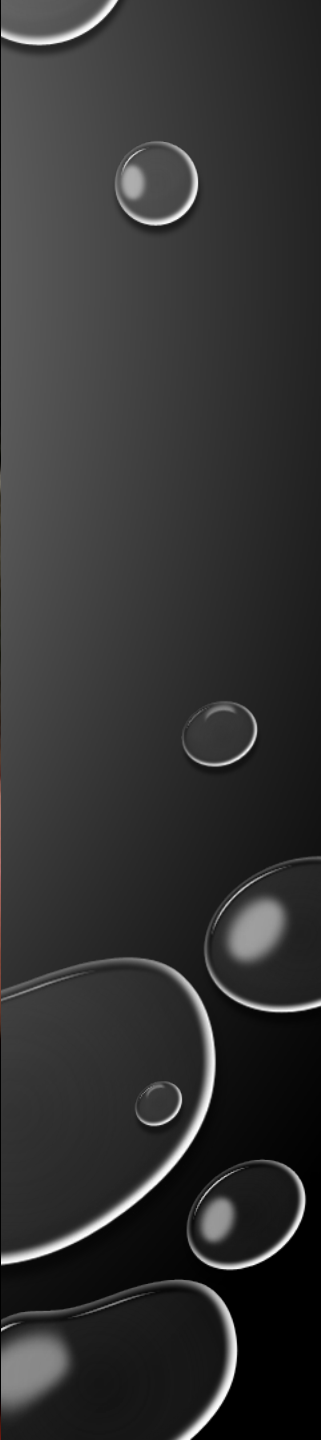
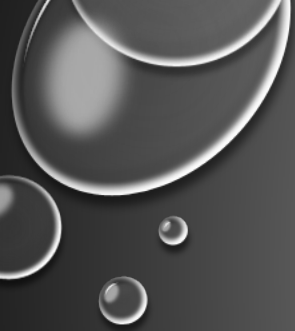


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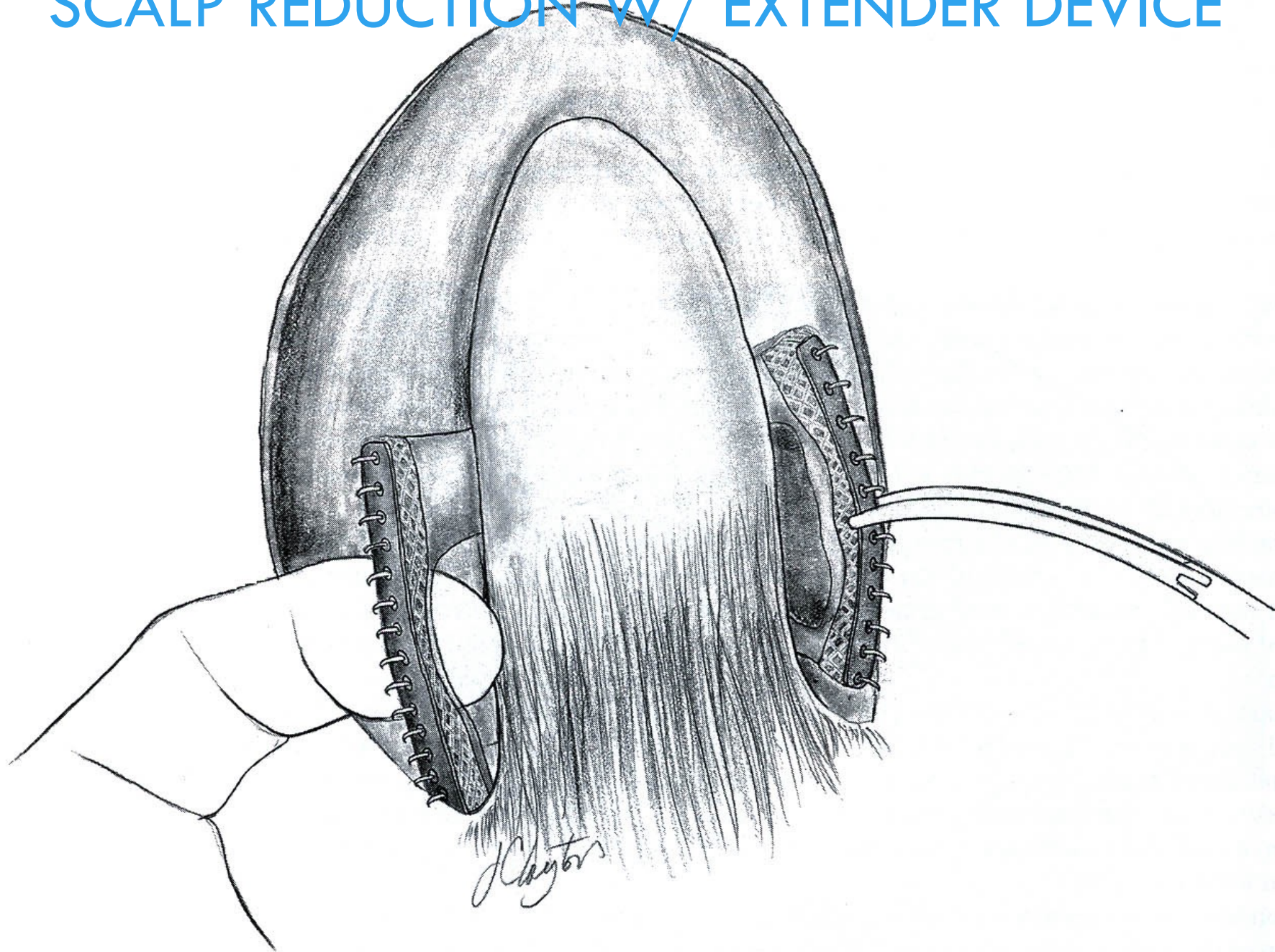








# SCALP REDUCTION W/ EXTENDER DEVICE

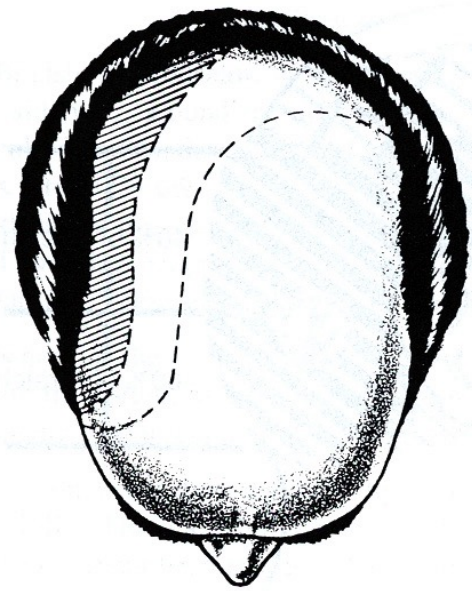




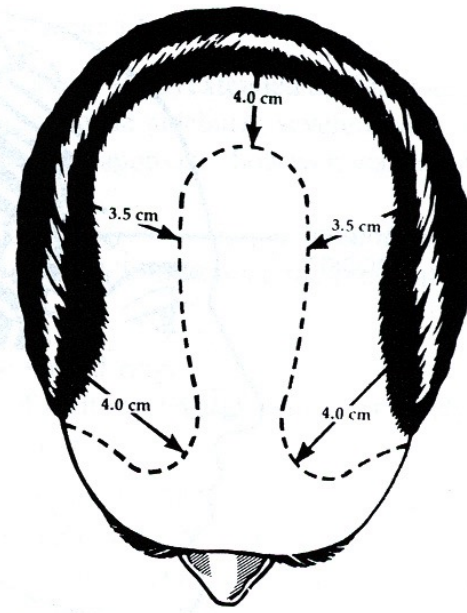
# HAIR RESTORATION SURGERY

## SCALP FLAPS

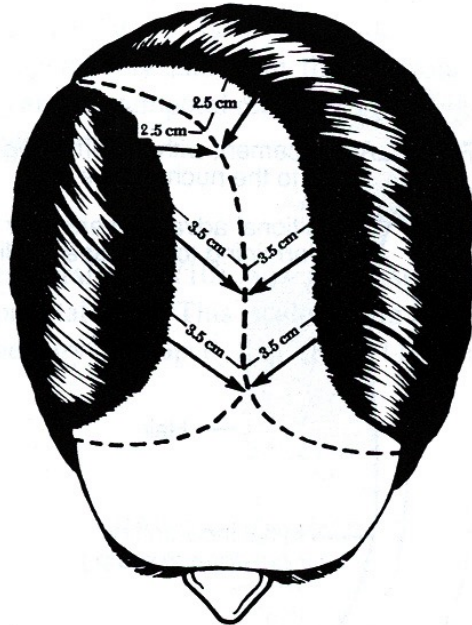
- GOAL = ROTATION OF INVENTORY
- CONTINUED HAIR LOSS WITH AGE
- POTENTIAL FOR SCARRING
- PLANNING IS CRITICAL
- PROCEDURES
  - FRECHET TRIPLE FLAP
  - TPO, JURI, PEDICLE FLAPS
  - SCALP EXPANDERS



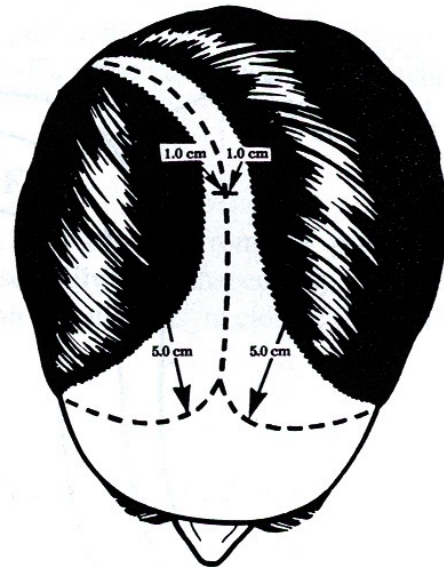
a)



b)



c)

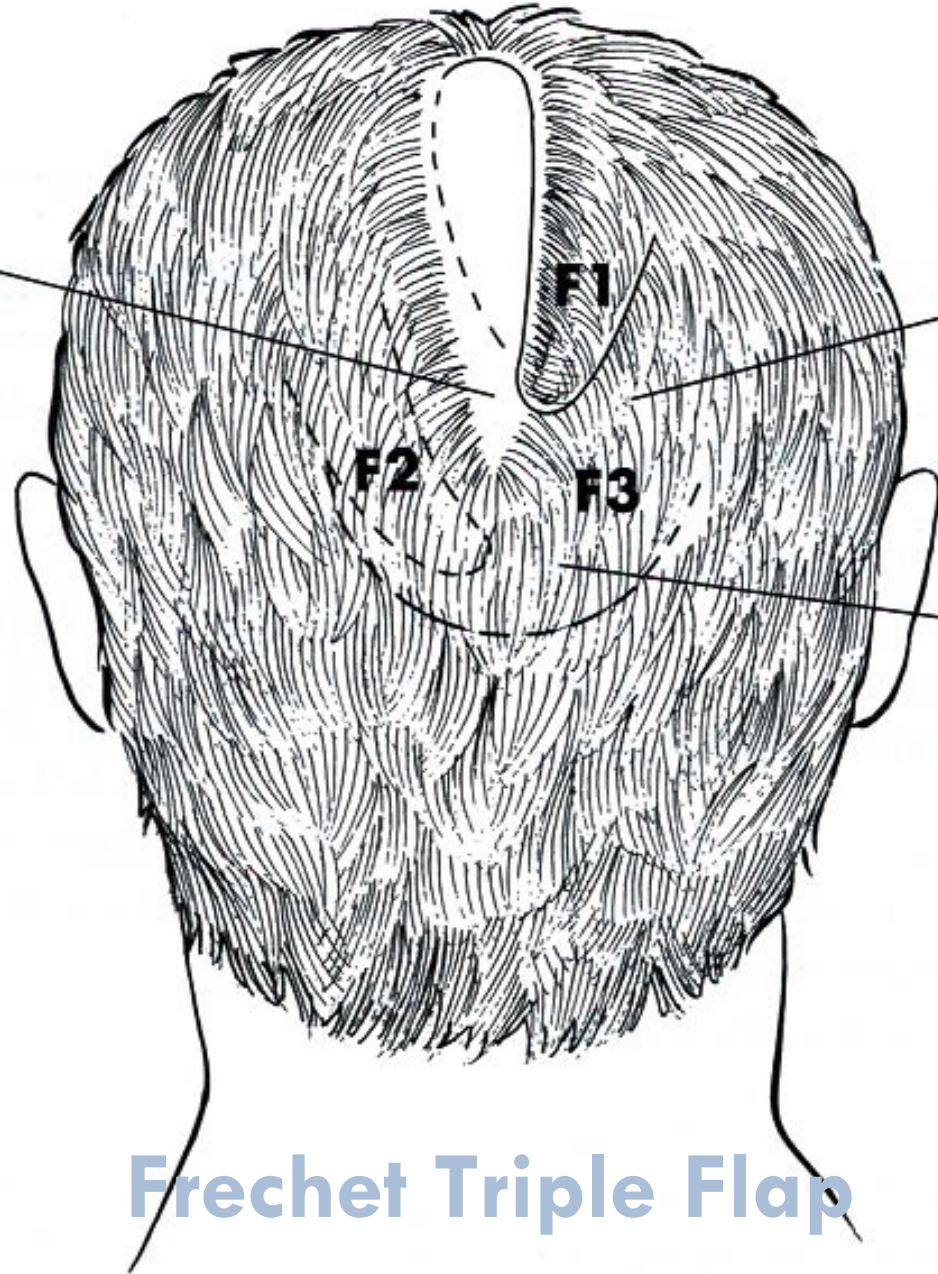


d)



# Correction Slot Deformity

This section  
is discarded



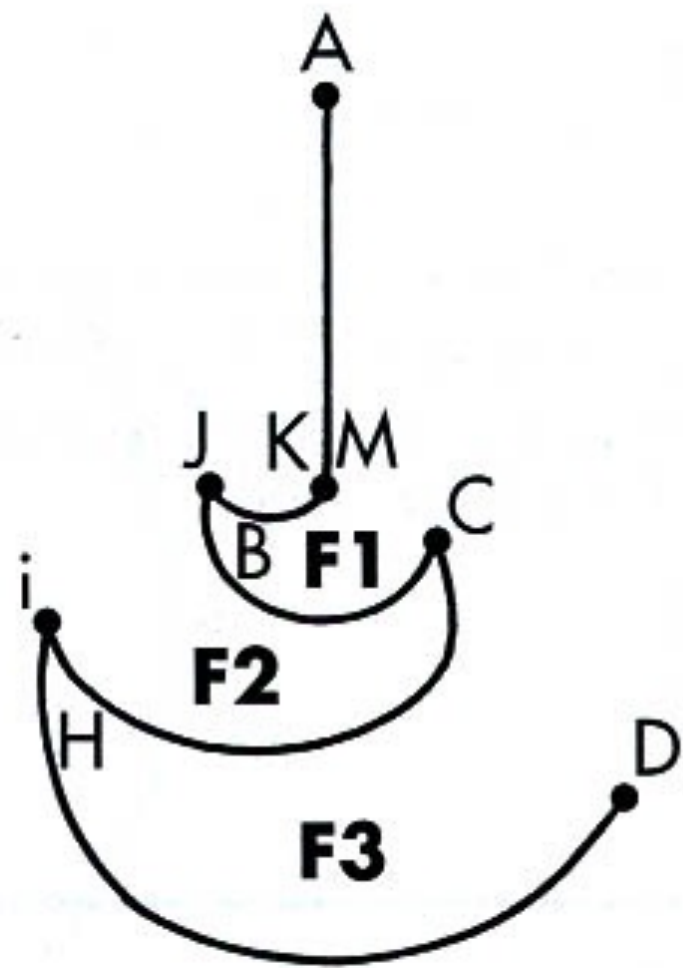
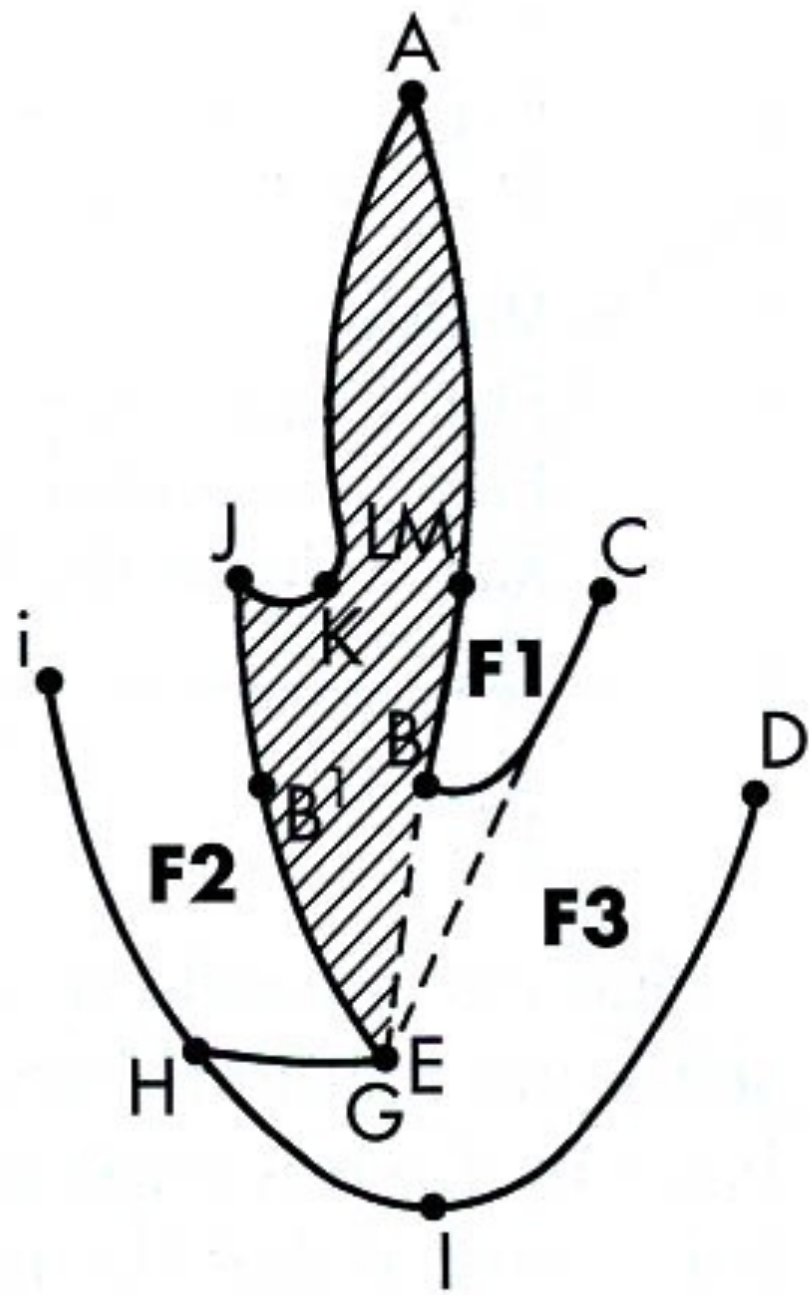
Base  
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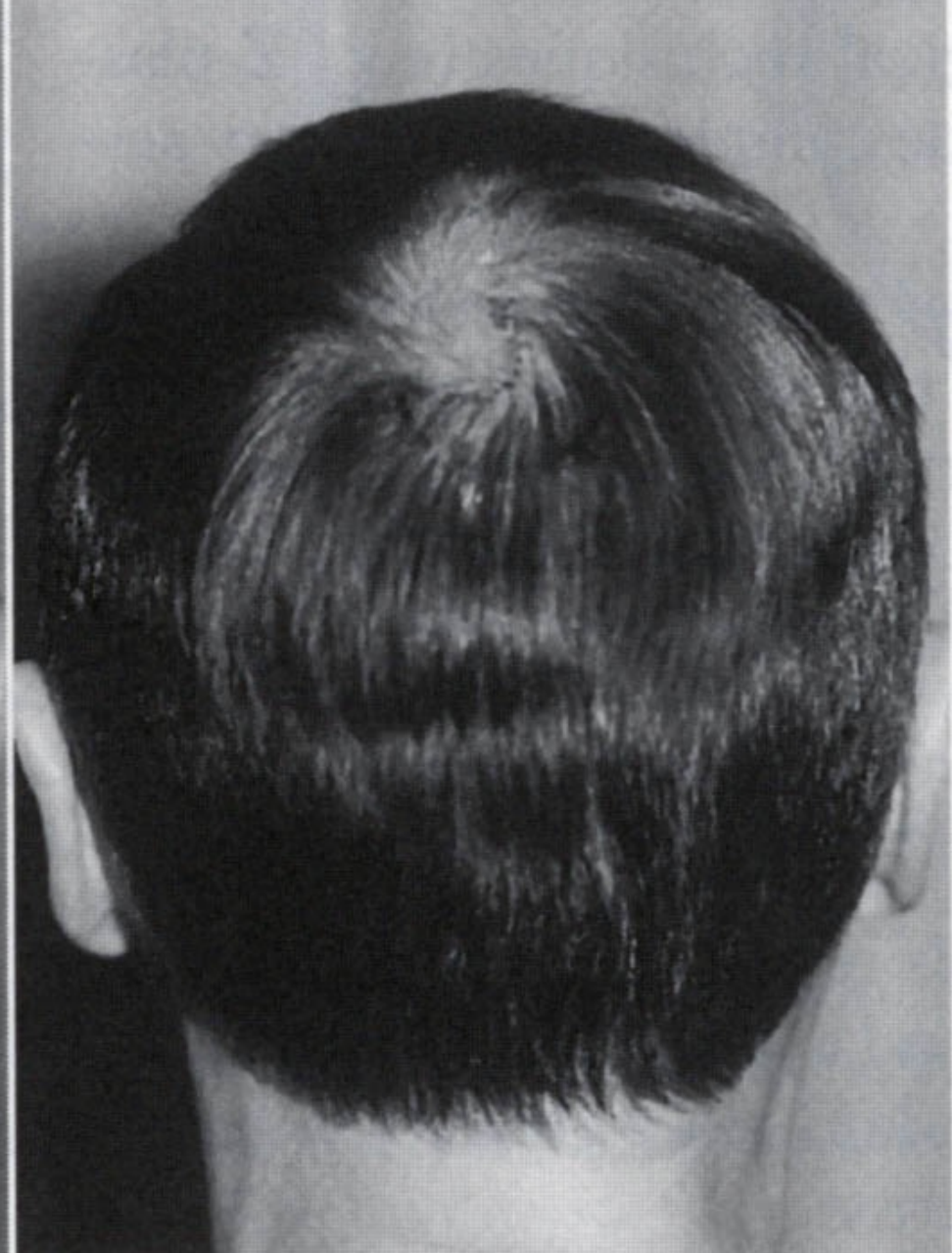
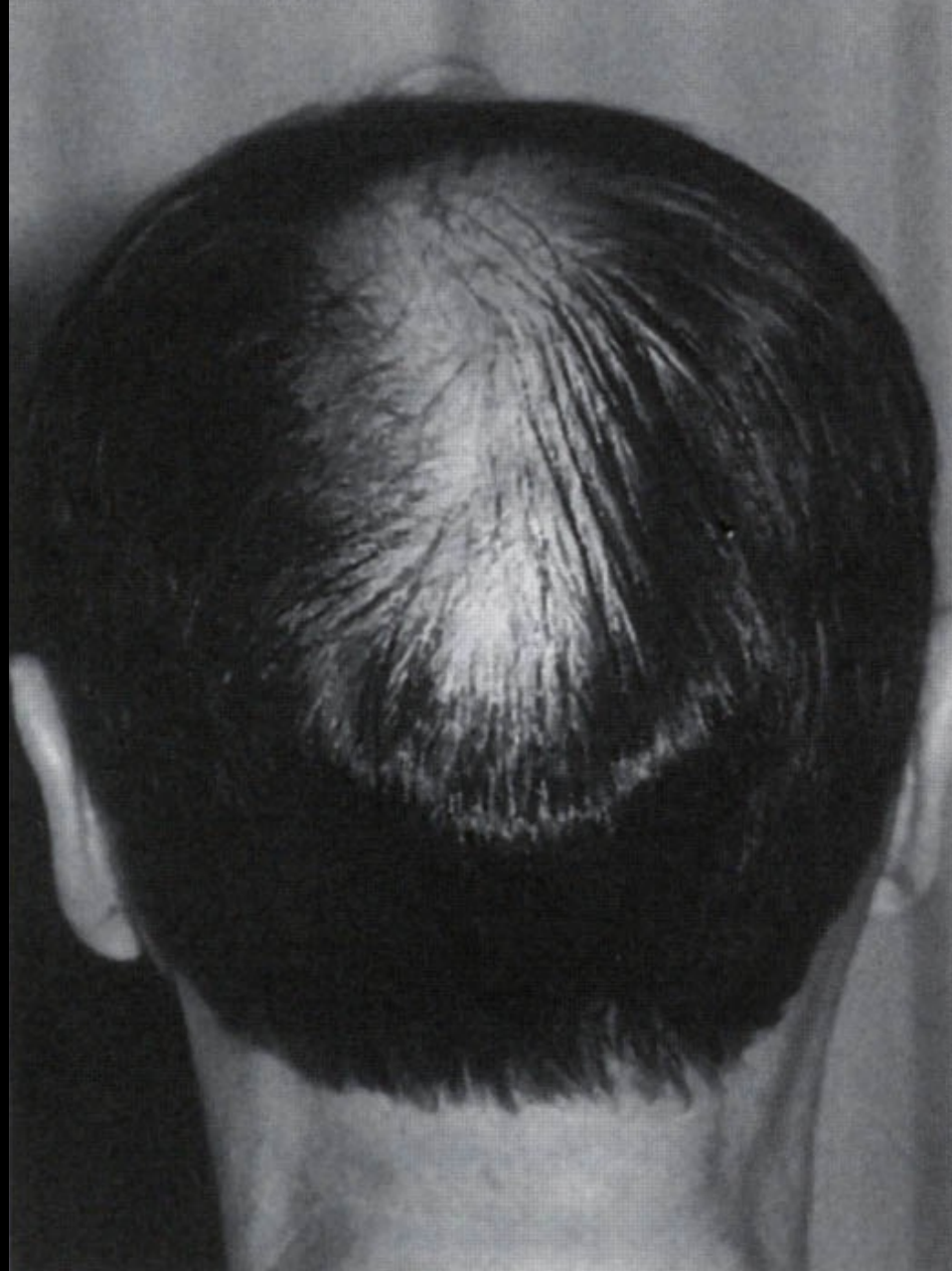
F2

F3

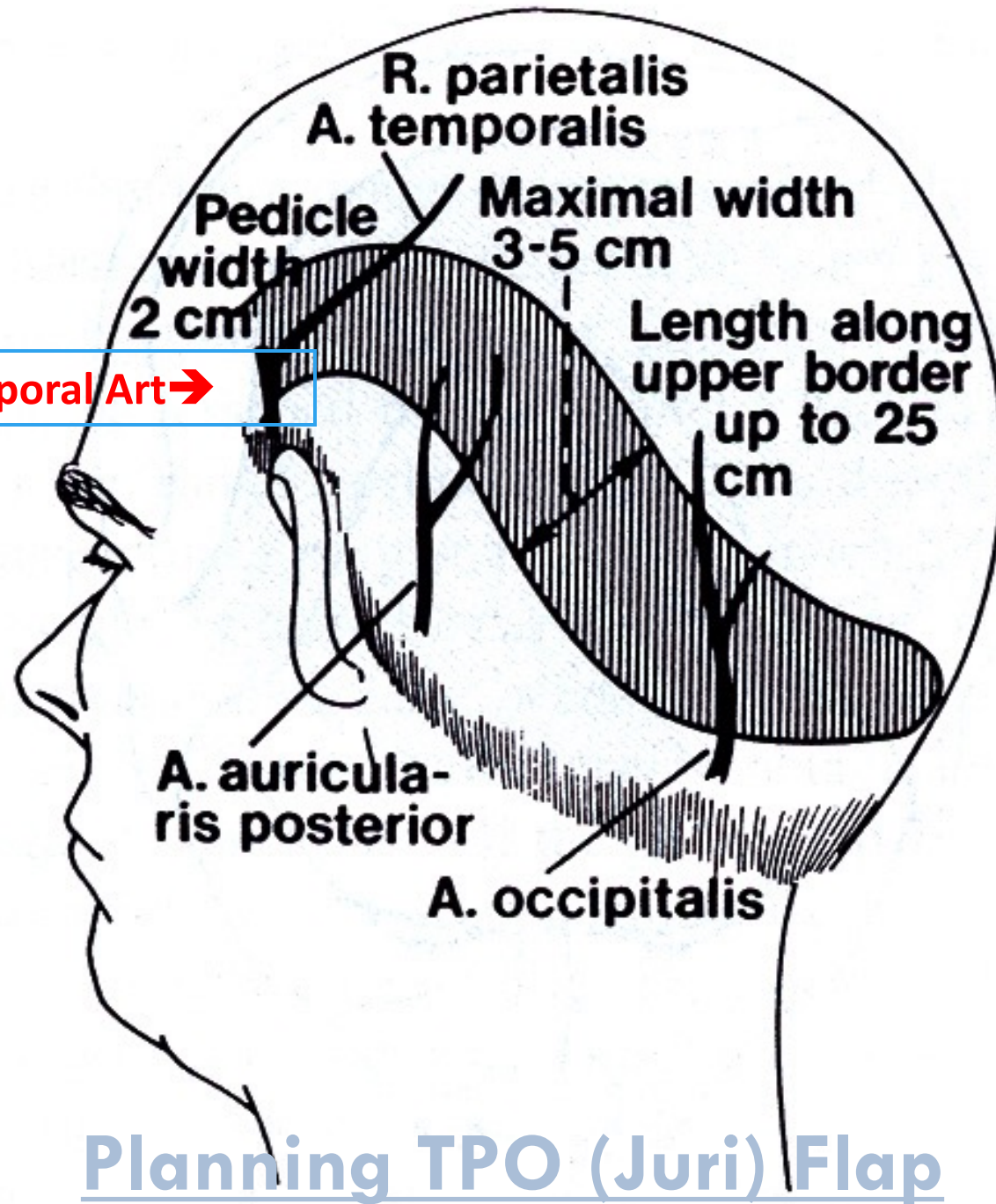
Length  
9.5-11 cm

Frechet Triple Flap





S. Temporal Art →



Planning TPO (Juri) Flap

A 3D anatomical model of a male head, viewed from the back and slightly to the side. The model illustrates the Juri Flap procedure, which involves a hair transplant. The hair is shown as a dense, dark brown mass on the back of the head, with a distinct line separating it from the balding area on the top of the head. The background is a dark, blurred gradient of purple and blue. The text "Juri Flap" is written in a stylized, white font with a black outline at the bottom of the model.

**Juri Flap**



**Juri Flap**

A 3D anatomical model of a human head from a posterior perspective, illustrating a Juri Flap procedure. The model shows the scalp and underlying structures. A large, semi-circular area of the scalp is highlighted in a light pink color, representing the flap. A surgical instrument, likely a scalpel, is shown making an incision along the lower edge of this highlighted area. The background is a dark, multi-colored gradient. The text "Juri Flap" is written in a white, serif font at the bottom center of the image. There are decorative water droplets in the top-left and bottom-right corners.

Juri Flap



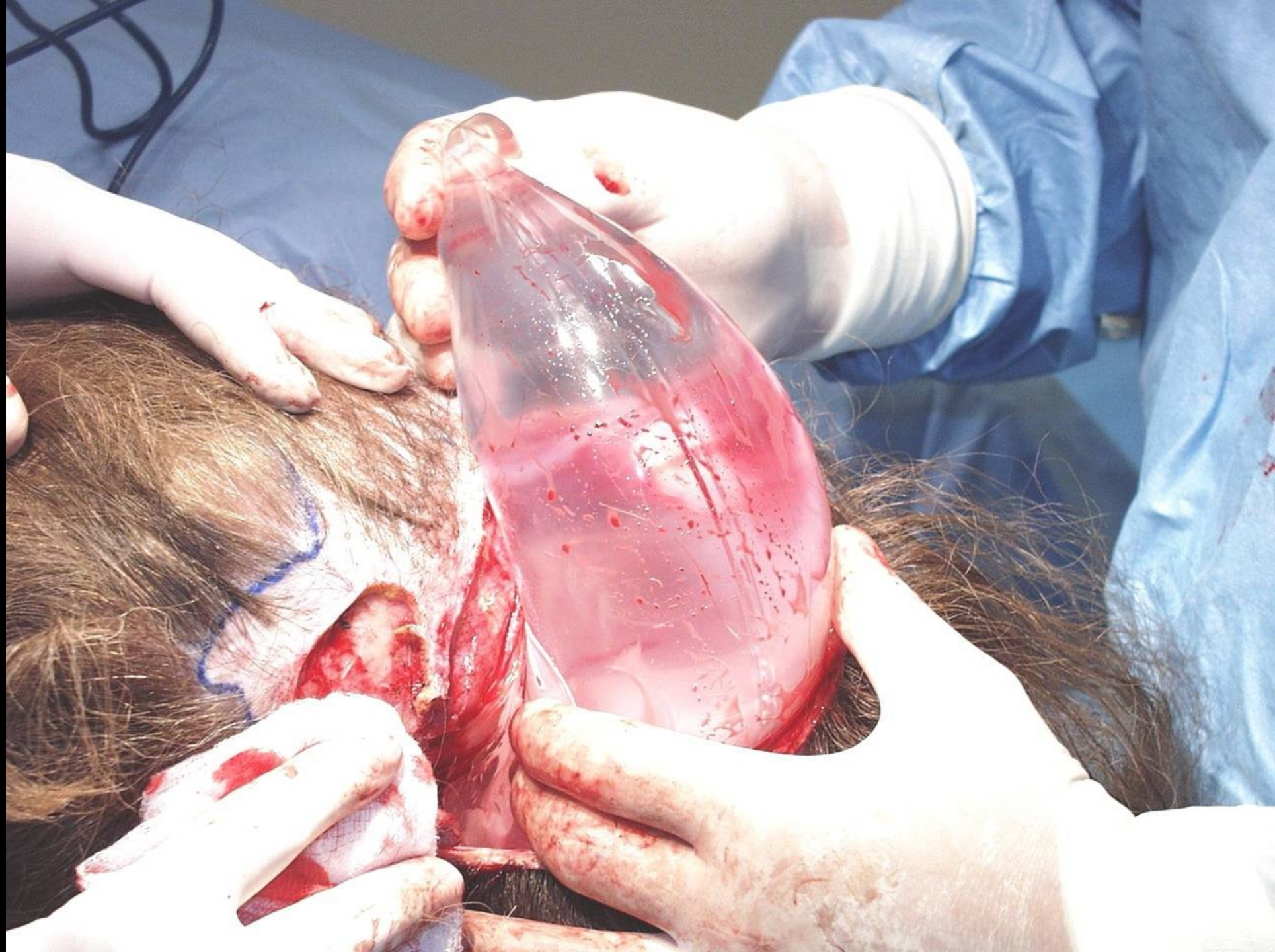
Juri Flap



# SCALP TISSUE EXPANSION











The background of the slide is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes and shapes, scattered across the top and bottom edges. The droplets have highlights and shadows, giving them a three-dimensional appearance.

# HAIR RESTORATION SURGERY SPECIAL CONSIDERATIONS









A histological micrograph showing a cross-section of a hair follicle. The central feature is a dense, dark-staining infiltrate of lymphocytes surrounding the hair bulb, characteristic of alopecia areata. The surrounding dermal tissue is stained pink and shows some fibrous structure. The text "Alopecia Areata" is overlaid in white at the bottom center.

**Alopecia Areata**



**Severe  
Myxedema**





**Trichotillomania**

# DIFFICULT CASE NEEDING ALL HRS TECHNIQUES

- 45 YO MAN
- ANTERIOR AND POSTERIOR TPO FLAPS 20 YEARS AGO
- SUBSEQUENT MASSIVE HAIR LOSS
- MULTISTAGE PROCEDURE FOR CORRECTION











# STAGE 1

- BROW LIFT TO EXCISE  $\frac{1}{2}$  OF ANTERIOR TPO FLAP
- TRANSPLANT EXCISED HAIR POSTERIORLY





## STAGE 2


- FLAP ADVANCEMENT TO EXCISE LAST  $\frac{1}{2}$  OF ANTERIOR FLAP
- Z TRANSPOSITION TO CORRECT BLUNTED TEMPORAL ANGLE
- TRANSPLANT EXCISED FLAP HAIR







# STAGE 3

- EXTENSIVE SCALP LIFT
    - REPAIR L TPO DONOR SCAR
    - EXCISE POSTERIOR FLAP
  - TRANSPLANT POSTERIOR TPO FLAP HAIR
- 





















9 months Later











2 Years Later













The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The word "SUMMARY" is centered in the upper half of the slide in a bold, black, sans-serif font.

# SUMMARY

- FORTUNATELY MOST OF THESE OLD PROBLEMS ARE RARE TODAY
- THE OLD TECHNIQUES THAT CREATED THESE PROBLEMS ARE USEFUL IN RECONSTRUCTION
- PROMOTE AWARENESS THAT THESE OPTIONS EXIST FOR THE NEXT PATIENT IN NEED



# HAIR RESTORATION SURGERY SUMMARY

- PATIENT SELECTION IS KEY TO SUCCESS
- MOST COMPLICATIONS ARE COSMETIC
- TERMINOLOGY
- SURGICAL PLANNING
- HAIR TRANSPLANTATION
- SCALP REDUCTION
- SCALP FLAPS
- SPECIAL PROBLEMS PREVENTING HRS

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# HAIR RESTORATION SURGERY REVIEW

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SEATTLE, WA

# THANK YOU