

Hair care practices and hair disorders in skin of color

Nkanyezi Ferguson, MD, FAAD
University of Iowa Hospital and Clinics
Iowa City, IA

Objective

- Review common terminology
- Discuss different hair care practices in communities of color
- Discuss different hair disorders in skin of color

Hair-care

- Hair appearance and style play an important role
- Styling practices are determined by individual hair characteristics and preferences
 - Current and historic trends
 - Ease and convenience of styling
 - Climate/season, occupation or activities
 - Health and maintenance of hair



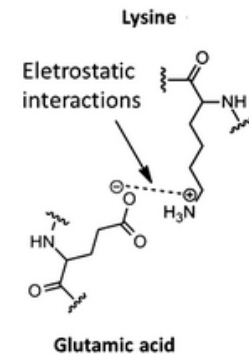
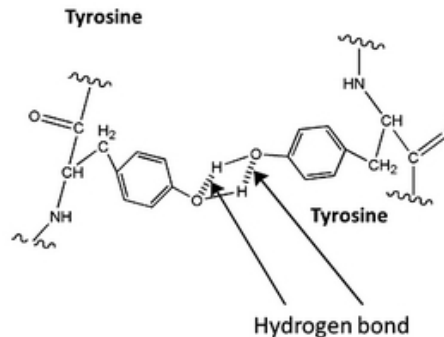
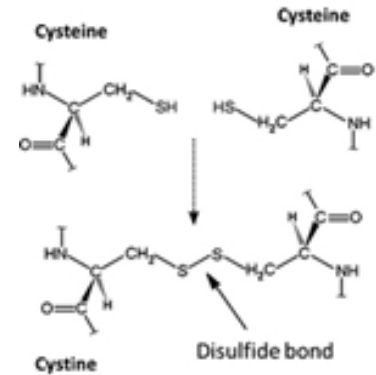


Terminology

- **Kinky hair** – Very curly, tangled and difficult to comb hair
- **Press** – Thermal straightening of the hair using a heating device
- **Permanent/Relaxer** – Chemical means of straightening the hair
- **Hair grease** – Protective hair coating agents that contain mixtures of petrolatum, lanolin, and vegetable, mineral, or animal oils
- **Natural** – Hair in its native state without chemical processing

Techniques for hair straightening

- Straightening consists of temporary or permanent breaks in chemical bonds that maintain structure of keratin proteins
- Keratin fibers have three types of inter-chain interactions
 - Disulphide bonds
 - Hydrogen bonds
 - Electrostatic interactions





Thermal Hair straightening

- Thermal manipulation of the hair unit temporarily disrupts the hydrogen bonds of keratin
- Heating devices: hot comb, hot iron, flat iron, curling iron
- Heating element: stainless steel, ceramic
- Reaches temperatures of 150 – 500°C

Thermal Hair straightening

- Hair is washed and dried (air or blow dry)
- Pomade, oil or cream-based lubricant is applied to hair
- Hair is partitioned into smaller sections
- Heating element is passed through the section of hair from hair root to end
- Temporary and reverts back to native state with water or humidity



Thermal Hair straightening





Thermal Hair straightening

- Pressing method depends on hair texture
 - Soft press
 - Medium press
 - Hard press
 - Double press

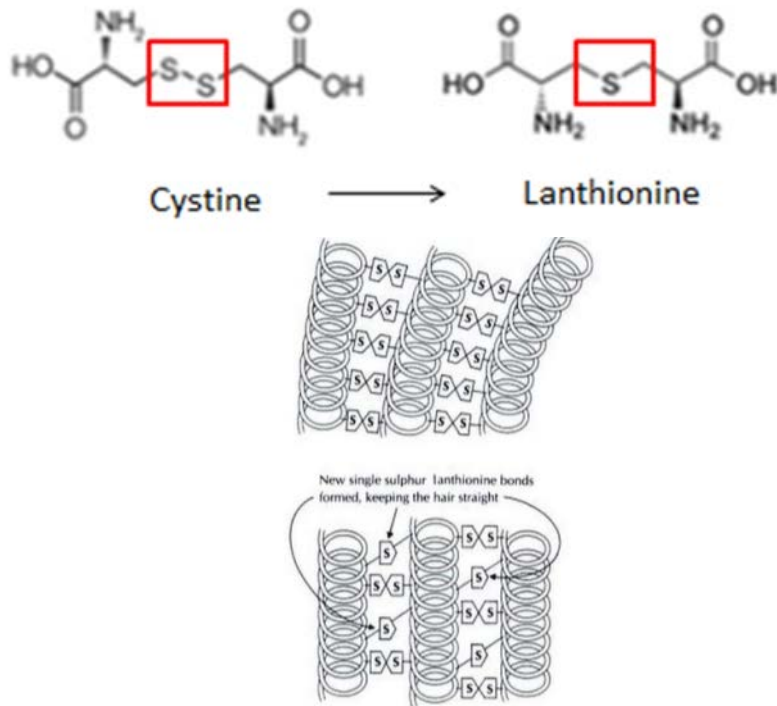
Chemical Relaxing

- Chemical straightening of the hair unit permanently alters the disulphide bonds of keratin
- Achieved through alkaline based products:
 - Lye-based straighteners:
 - Sodium hydroxide
 - Non-lye straighteners:
 - Guanidine hydroxide, Potassium hydroxide, Lithium hydroxide
- Alkaline pH allows penetration of chemical straightener through the hair cuticle into cortex



Chemical Relaxing

- Disulphide bonds undergo rearrangement
 - ~35% cystine is converted to lanthionine (lanthionization)
 - Difference between a cystine and a lanthionine is the loss of one sulphur atom



Chemical Relaxing

- The hair is divided into sections
- Relaxer is applied to hair
- Vaseline used to protect the scalp
- Relaxer is left in place for varied duration of time
- Hair is washed with an acidic 'neutralizing' shampoo
- Hair is then conditioned, dried and ready for styling



<https://www.youtube.com/watch?v=u8LNg4-LPJM>

Chemical Relaxing



<https://www.pinterest.com/pin/319263061054666955/>



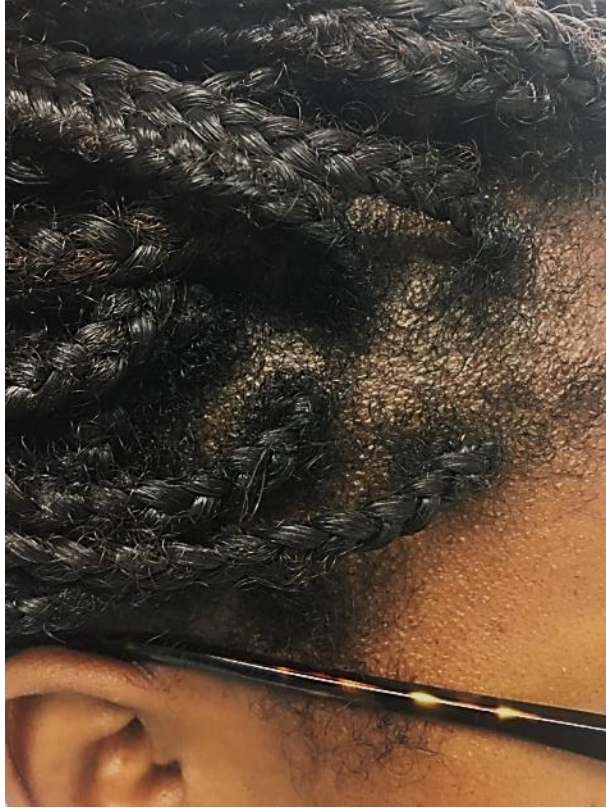
Braiding

- Braids are composed of three or more interlacing pieces of hair
- Different types of braids:
 - Plaits, single box braids and microbraids
- Braiding can be done with natural/relaxed hair
- Hair extensions can be integrated

Braiding



Braiding



Cornrows

- Stationary braid that lays flat on the scalp
- The hair is parted and sectioned
- Designs can be varied and intricate
- Parting of the hair has to be as accurate as possible
- Can be done with natural/relaxed hair or extensions can be added



<http://buzznigeria.com/cornrow-hairstyles/#>



Cornrows



Hair Twists

- **Two-strand and Senegalese twists**
 - Hair is sectioned into two strands
 - Each individual strand is twisted
 - Each twisted strand is then progressively wrapped over the other with even tension
 - Ends are secured with pomades/gels/waxes/bands



Two-strand Hair Twist

- Extensions can be used to vary the thickness and length of this style



Hair Twists

■ Flat twists

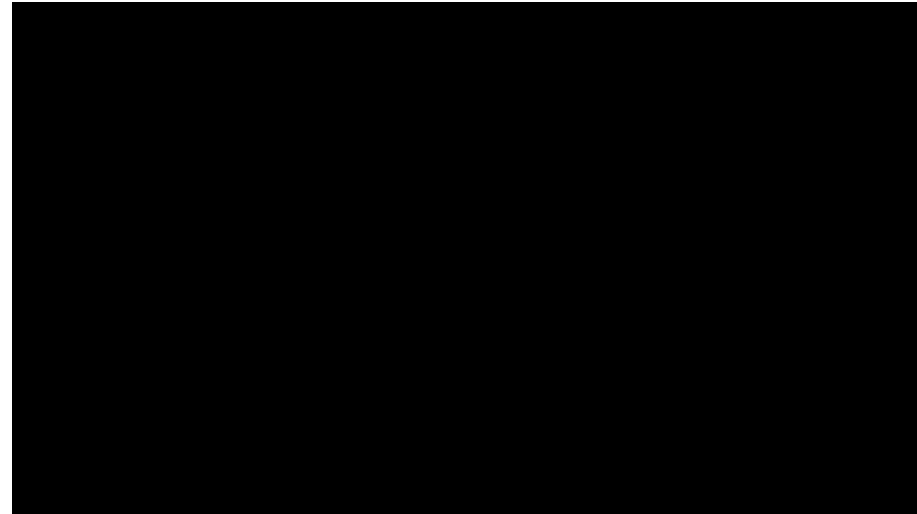
- Hair is sectioned into a narrow channel
- The hair is separated into two strands
- Each strand is wrapped around the other
- Hair is kept flat on the scalp and new hair along the channel is picked up with a continued twisting motion



Hair Twists

■ Comb twist/coils

- Gel is distributed throughout dry hair
- Hair is sectioned into small squares
- End of a tail comb is used to grasp the root of the hair
- The comb is continuously rotated downwards resulting in twisting of the hair
- Gel will set and secure twisted hair in place



<https://www.youtube.com/watch?v=-6jbWGVNIBk>

Hair Extensions

- Hair extensions
 - Human hair
 - Synthetic hair
- Extensions can be clipped, pinned, crocheted, cornrowed or braided into hair for added length/body



Hair Extensions



Hair Extensions



Hair Extensions



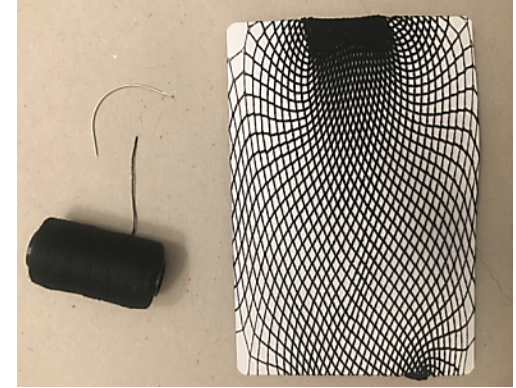
Hair weaves

- Human or synthetically manufactured hair
- Weave hair section (weft) is either sewn or glued in place
- Application of a weave can cost anywhere from the low hundreds dollars to \$2,000+
- It can take anywhere from 2-8 hours to complete sewn-in hair weaves



Sewn in hair weaves

- Hair is cornrowed into horizontal or vertical patterns
- Weave cap may be used
- C-shaped weave needle and nylon thread
- The weave is sewn in securing the weft to the cornrowed hair



Glued Weaves

- Hair bonding and fusion with adhesives



<http://www.cchairextensions.com/blog/category/hair-weave/>



<https://www.youtube.com/watch?v=UjhFbDkVnNM>



<http://www.wikihow.com/Do-a-Quick-Weave>

Weaves



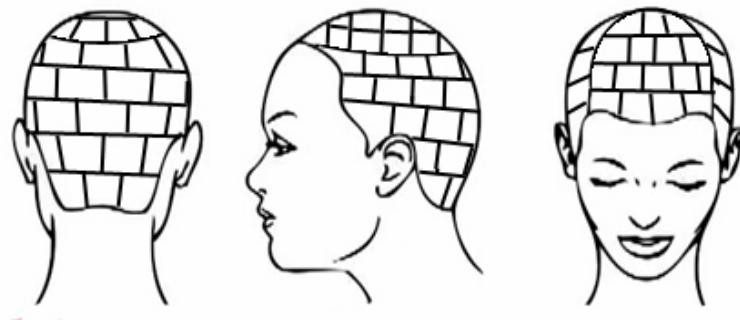
Locs

- Hair style worn by women, men and children
- Locks form when hair tangles and mats into clusters
- Once the style matures it is irreversible
- Avoid the term 'dreadlocks'



Locs

- Loc styles are based on either a brick-lay or diamond pattern
- Several beginning/starter style options include:
 - Free-form
 - Guided
 - Palm rolls, comb coils, 2-strand twists, braids
- Requires regular grooming and twisting of new hair growth







<http://ragingrootsstudio.com/brick-lay-pattern/>

Locs

- Stages of locking
 - Starter, Budding, Teen, Mature, Rooted
 - Pre-lock, Budding, Shooting, Contracting
 - Baby, Teen, Adult, Elder

THE FOUR STAGES OF HAIRLOCKING

 BABY	I. PRE-LOCK PHASE The hair is in thin, tightly coiled spirals. Its appearance is along the lines of either ringlets or Shirley Temple curls. This is the infancy stage (baby locks).
 TEEN	II. BUDDING PHASE During this phase a small bud (like a pea in a pod) begins to emerge about three quarters down the lock. The matted, interlocking imprint begins at the bud and then expands like a bubble because it is beginning to loosely mat. It is an enlarged microcosm of a lock. At this stage the lock is no longer tight and thin. It is rebellious, has a mind of its own and is discovering its own way (teen locks). It acts like a teenager in a sense.
 ADULT	III. SHOOTING PHASE After the budding phase, the entire lock begins the process of interlocking and matting. The direction is downward from the bud to the end of the hair and back upwards toward the scalp (similar to how some plants develop). The hair closest to the scalp is not locked; this is where you have new growth. During this phase, the hair increases in density because it begins to replicate itself like DNA. Your hair remains in this phase for the longest period of time (adult locks).
 ELDER	IV. CONTRACTING PHASE This is the final stage in which the hair becomes mature adult locks: an airtight interlocked, spiraling, network system. The locks become consistent, tight and fairly solid at this point. It will probably be fairly long in length at this point, as the hair will grow extraordinarily once the spiral form has been established. (elder locks).

Hair Setting

- Molding techniques range from light hold to freeze hold
- Setting lotions/styling gels have fixatives that contain plasticizers such as propylene glycol or glycerin

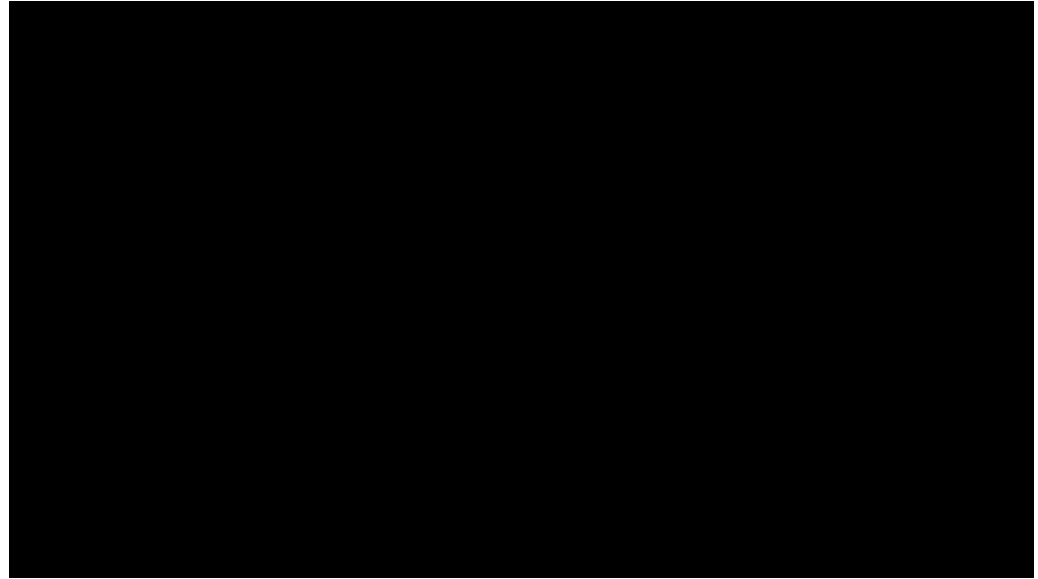


<http://kayewright.com/short-relaxed-hair-mastering-the-short-hair-mold/>



Hair Setting

- Setting lotions/styling gels applied to hair
- Comb and/or fingers are used to mold or curl the hair



<https://www.youtube.com/watch?v=fJ2wfeBY91g>

Natural Hair

- Refers to hair that has not been chemically treated
- Increasing in popularity over the last decade
- Transitioning from chemically treated to natural hair:
 - “Big chop” refers to cutting off all chemically treated hair
 - Simply growing out chemically treated hair
 - Protective styling (e.g. braids, weaves, extensions)



'Pre-Poo' and Hot oil treatments

- 'Pre-Poo'
 - Application of oils to the hair prior to shampooing
- Hot oil treatments
 - Heat oil until warm
 - Massage oil into damp hair from roots to ends
 - Place hair under plastic cap ~20-30 minutes
 - Wash and rinse hair thoroughly





Preserving Hair Styles

- Hair wrapping
- Pin curling
- Pineapple

Hair Wrap

- Hair is smoothed against the scalp and wrapped in a circular motion around the head
- Wrap is secured in place with a satin scarf/wrap cap



Pin curling

- Hair is partitioned into small sections
- Hair is wrapped in the direction of the curl
- Hair is gathered, twisted and secured in place



“Pineapple”

- Used to preserve and protect curls in women with natural hair styles
 - Hair is gathered in a high loose ponytail on the top of the head
 - Satin scarf is wrapped around the head
 - If hair is short a ‘multi-pineapple’ approach can be taken



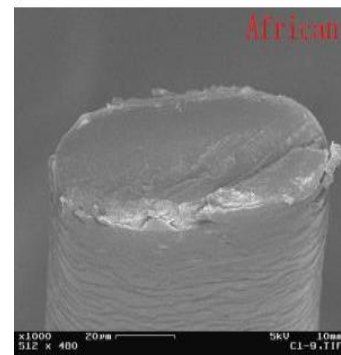
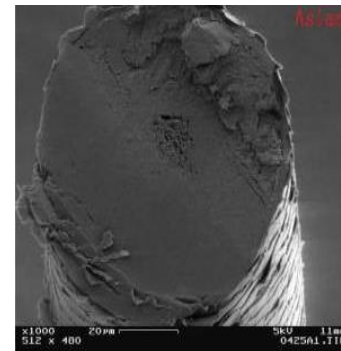
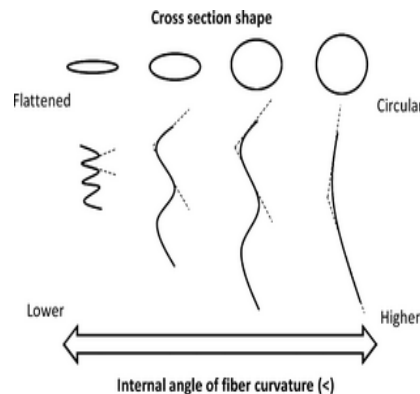
Summary

- Hair styles among communities of color are varied
- Hair style is based on hair characteristics and individual preferences
- Understanding different hair care practices can help dermatologists have more meaningful and impactful discussions with patients

Hair Disorders in skin of color

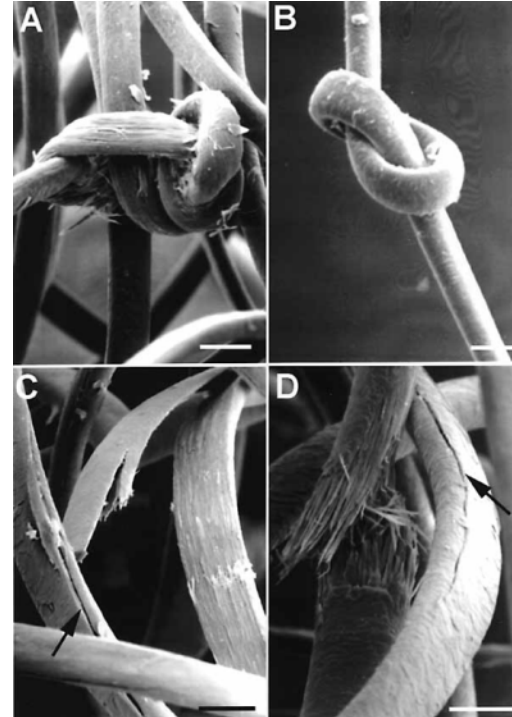
Hair phenotype

- Evaluation of hair among different ethnic groups demonstrate no biochemical differences
- Structural differences do however exist
 - Elliptical cross section shape
 - Hair follicle forms tight curls



Properties of Afro-ethnic hair

- Afro-ethnic hair
 - Easily forms knots
 - More likely to break
 - Develops frayed tips
 - Lower water content
 - Lower amounts of sebum (natural protective oils)



Seborrheic dermatitis

- Chronic inflammatory condition
- Occurs on the scalp, face, & chest
- Can affect infants (cradle cap), children and adults
- Itchy, dry, flaky
- Exact cause is unknown
 - Sebum from sebaceous glands
 - Malassezia yeast on skin
 - Genetic susceptibility





Seborrheic dermatitis

- Risk factors
 - Build up of hair products on the scalp can cause irritation
 - Oils on the scalp can mask the scaling and result in more irritation
- Treatment
 - Cleanse hair every 1 to 2 weeks
 - Anti-dandruff shampoos (caution as these can dry the hair)
 - Use only on the scalp and rinse out completely
 - Follow with regular moisturizing shampoo and conditioner to hair
 - Use hair oils on the hair shaft only
 - Prescription oil-based topical steroids

Central centrifugal cicatricial alopecia (CCCA)

- Chronic, progressive scarring alopecia
- Centered on the crown or vertex
- Gradually expands symmetrically with the most active disease at the periphery
- Usually has no symptoms but some patients complain of itching or burning
- Most commonly seen in women of African descent
- Treatment
 - Steroids (topical, injection)
 - Doxycycline/Minocycline
 - Hydroxychloroquine



Traction alopecia

- Traction alopecia is caused by repeated pulling on the hair from hairstyling or hair care
- Presentation
 - Raised bumps around hair
 - Hair thinning in areas of tension (commonly frontal hairline)
- When identified early, the styling can be modified and hair will regrow
- However, over time, traction alopecia can lead to scarring and become irreversible



Traction damage to the hair

- Hairstyles that place traction on the hair
 - Individual braids
 - Cornrows
 - Weaves
 - Locks
 - High ponytails



Traction damage to the hair

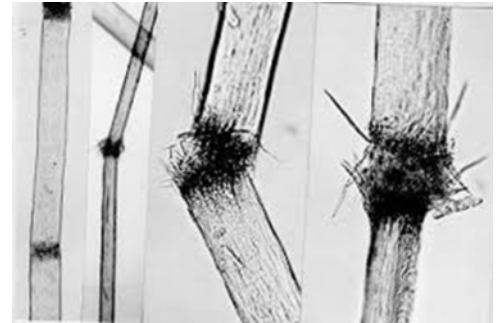
Tips to avoid damage

- Avoid styles that put tension/traction on the hair
- Make sure braids and cornrows are not too tight
 - If it hurts while your hair is being styled, ask the stylist to stop and redo
- Avoid excessive volume or weight of hair extensions/weaves
 - Wear light-weight, shoulder length extensions/weaves
- Rotate the pattern of braided and twisted hairstyles
- Use 'no damage' hair hosiery instead of rubber bands or elastic holders
- Avoid sleeping in rollers; opt instead to wrap or pin curl the hair at night
- Wear weave/extensions for 2-3 months at most
- Remove and replace braids every 4-6 weeks
- Use a well-trained professional

Hair fragility

Acquired trichorrhexis nodosa

- Response of the hair shaft to extrinsic or environmental insults
- Results in hair breakage or lack of growth
- Because hair is non-living tissue, total repair of the hair shaft is not possible
- Management of this form of hair loss involves protecting the hair shaft and minimizing further damage



Heat damage to the hair

Heat treatment/Thermal straightening

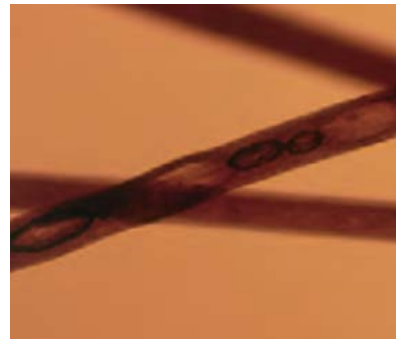
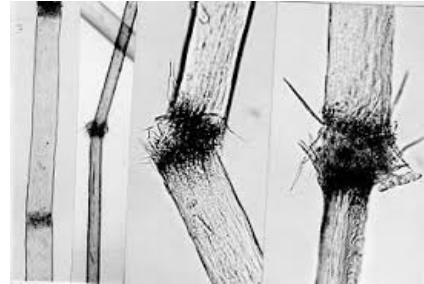
- Includes blow drying and pressing hair (hot comb, flat iron, curling iron)
- Hair heated to 150–500°F



Heat damage to the hair

Heat treatment/Thermal straightening

- Heat causes hair damage:
 - Increases dryness
 - Bubble formation
 - Weak points
 - Split ends
 - Hair breakage





Heat damage to the hair

Tips to avoid damage

- Only treat clean (cleansed and conditioned) hair
- Consider air drying/wet setting hair instead of blow drying
- Use only on dry hair
- Use a heat protecting product before styling
- Treat hair no more than 1-2 times/week
- Use lowest heat setting possible (use straightening device with a dial)
- Use ceramic combs or irons to press hair
- Obtain regular trims (every 8-12 weeks)
- Use a well-trained professional



Chemical damage to the hair

Chemical relaxers

- Chemical relaxers cause damage:
 - Scalp contact irritation
 - Scalp chemical burns
 - Loss of tensile strength of the hair shaft
 - Increased fragility of the hair shaft
 - Possibly scarring hair loss

Chemical damage to the hair

Tips to avoid damage

- Relaxers should only be applied to the new growth
- Never apply relaxer to hair that has already been relaxed
- Use non-lye based chemical relaxers
- Use a mild relaxer instead of regular or super strength
- Space out relaxer application to every 6-12 weeks
- Use moisturizing shampoos and conditioners liberally when hair is washed
- Avoid scalp manipulation prior to chemical treatments
- Use licensed cosmetologist for chemical treatments

Product damage to the hair

Styling products

- Long lasting styling products
 - e.g. gels, sprays, and spritzes
- Products are designed to form a thick protective coating
- Dries out the hair shaft and scalp
 - Tensile strength of hair shaft is reduced
 - Increased fragility and breakage
 - Worsening of seborrheic dermatitis from lanolin additives



Product damage to the hair

Tips to avoid damage

- Decrease combing and grooming once styling product is set in place
- Wash these products out regularly to ensure healthy sloughing of scalp skin and to minimize drying of the hair shafts
- Try to avoid hairstyles that need these products



Healthy hair care regimen

- Principles of hair cleansing regimen
 - Proper cleansing of the hair is one of the cornerstones of any healthy hair care regimen
 - Although sebum acts as a natural moisturizer, it is also a potent attractant of dirt, dust and other pollutants
 - Inadequate cleansing of the hair and scalp can result in the buildup of styling aids which can lead to scalp irritation
 - Regular cleansing is necessary to maintain a healthy hair and scalp
 - 1–4 times per month depending on hair type

Shampoo

- Avoid drying shampoos as this can lead to increased fragility and breakage
- Shampoos that contain nonionic surfactants
 - Gentler and less likely to strip moisture from the hair shaft
 - Decyl glucoside, fatty alcohol ethoxylates (cetyl alcohol, stearyl alcohol, etc.), sorbitan ether esters
- Anionic shampoos have excellent cleansing, but leaves the hair dry and susceptible to breakage
 - Lauryl sulfate, laureth sulfates, sarcosines, sulfosuccinates, sodium myreth sulfate, sodium stearte



Conditioning

- Conditioning is the most important component of a healthy hair care regimen
- Formulated to mimic the action of sebum
- Types of conditioners
 - Rinse-out conditioners
 - Deep conditioners
 - Leave-in conditioners
 - Protein-containing conditioners and protein treatments



Conditioning

- Types of conditioners
 - Rinse-out conditioners
 - Less effective at repairing hair damage
 - Use of rinse-out conditioners in place of shampooing (“co-washing”)
 - Deep conditioners
 - Typically left on the hair for at least 10 min
 - Enhance moisturization and are beneficial for severely damaged hair
 - Leave-in conditioners
 - Can help prevent damage from routine grooming
 - Protein-containing conditioners and protein treatments
 - Contain proteins, which are small enough to penetrate the hair shaft and repair holes and defects
 - Use monthly or bi-monthly basis

'Soak and smear' method for hair

- Some oils (e.g. coconut oil) when applied to wet hair can decrease moisture loss and protein loss
 - Helps to prolong the benefits of shampooing and conditioning
 - 'Soak and smear' treatments
 - 1. Shampoo and/or condition the hair as normal and lightly blot the hair with a towel
 - 2. Follow with the application of a water-based leave-in conditioner to the hair
 - 3. Immediately apply an oil or thick occlusive moisturizer (e.g. coconut oil, olive oil, jojoba oil, or mineral oil to the hair)
 - 4. Allow the hair to air dry and style as desired

Exercise and hair care

- African-American women are **least likely** to meet recommended physical activity guidelines
- ~40% report avoiding exercise due to hair style
- Consider selecting hair styles to accommodate exercise:
 - Ponytail, cornrows, braids or natural hairstyles
 - Scarf or hair wrap



Questions?

