



LOVE THE SKIN YOU'RE IN

MARGARET MCKERNAN DMSC, PA-C

APEX DERMATOLOGY

CLEVELAND, OH



OBJECTIVES

- RECOMMEND EVIDENCE-BASED ANTI-AGING TIPS AND STRATEGIES TO ENHANCE PATIENT GUIDANCE ON SKIN CARE
 - DESCRIBE BOTH PHARMACEUTICAL AND COSMECEUTICAL PRODUCTS FOR ANTI-AGING
 - MANAGE REFERRALS FOR ADVANCED AESTHETIC TREATMENTS
 - DISCUSS EMERGING COSMECEUTICALS
- 

THE IMAGE OF YOUTH

- LARGE ALMOND-SHAPED EYES, CHEEK FULLNESS, A CURVILINEAR PROFILE, SLIGHTLY PROTRUSIVE AND FULL LIPS, AN ADEQUATELY PROJECTING CHIN, A DEFINED JAWLINE, AND HOMOGENEOUS SKIN TONE
- RADIANCE- YOUTHFUL, HEALTHY-LOOKING COMPLEXION
 - DETERMINED BY LIGHT REFLECTING FROM THE SURFACE OF SMOOTH SKIN
 - GLOW NOT SHINE

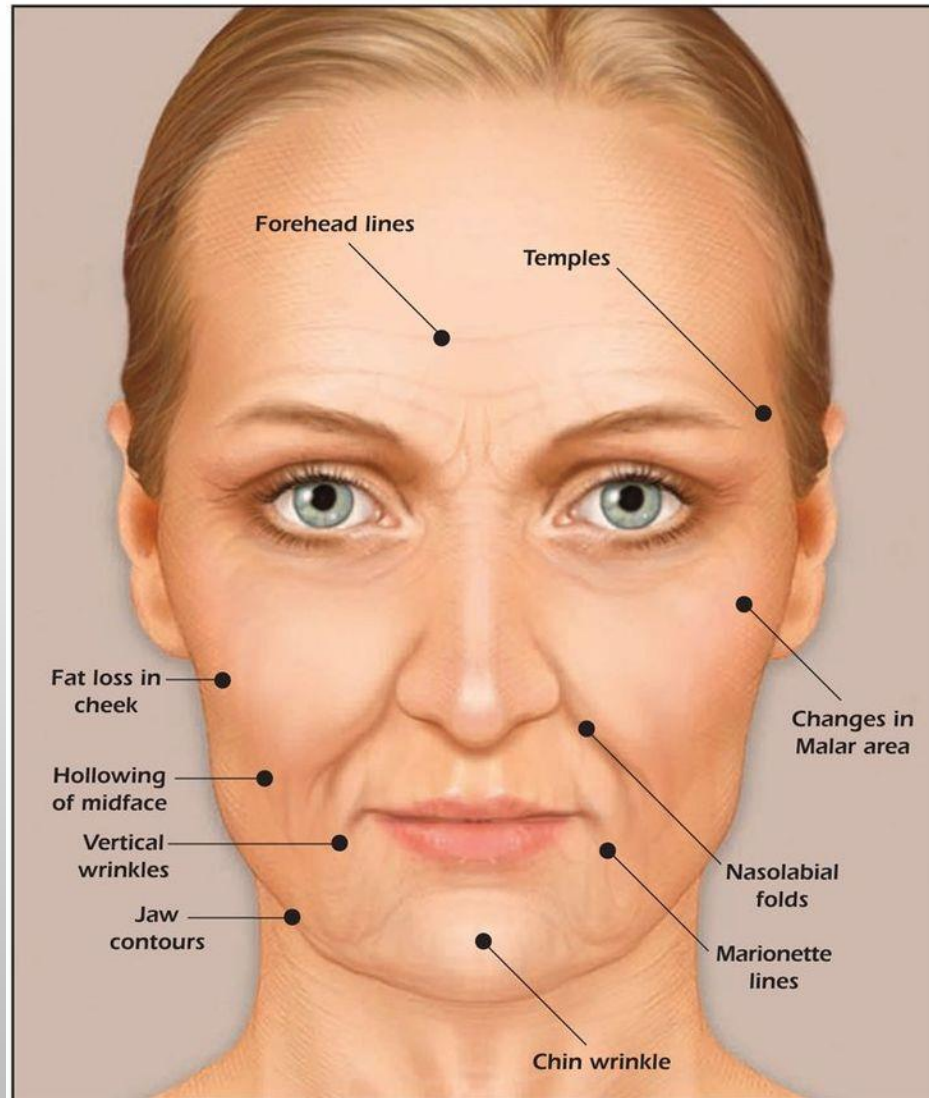
THE SCIENCE OF AGING SKIN

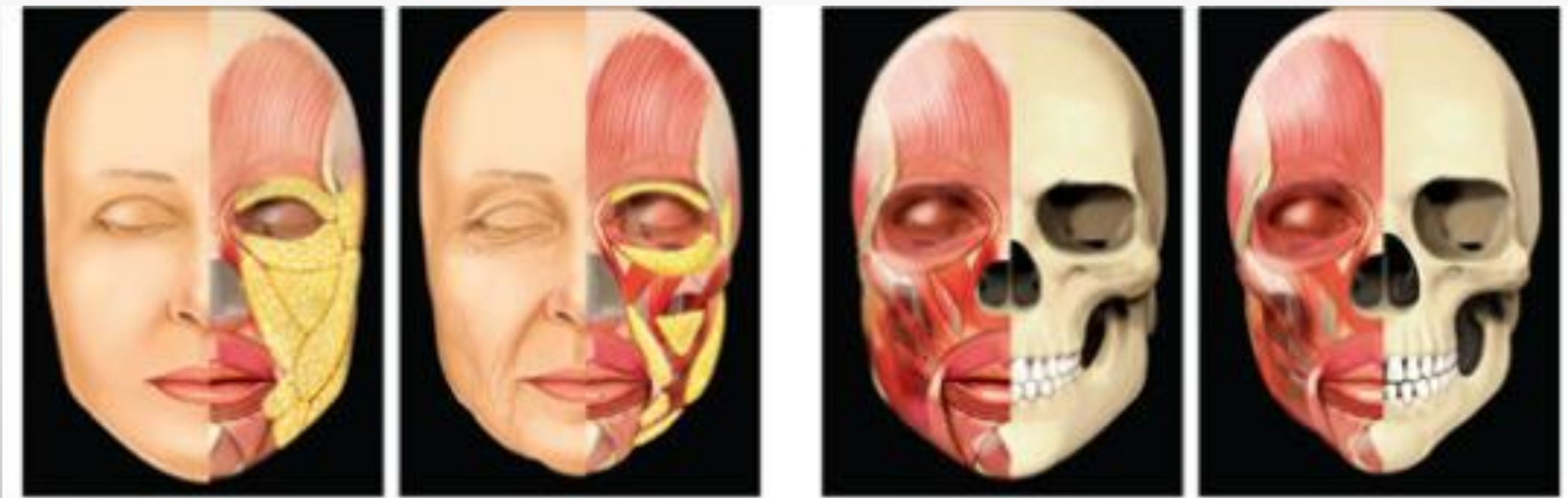
- LAYERS OF THE SKIN
 - EPIDERMIS- WATERPROOF BARRIER CONTRIBUTES TO SKIN TONE
 - DERMIS- CONTAINS CONNECTIVE TISSUES AND BLOOD VESSELS
 - SUBCUTANEOUS- FAT AND CONNECTIVE TISSUES
- SENESENCE- CHANGES AS BONE REMODELS, FAT PADS ATROPHY OR REPOSITION, AND SKIN WRINKLES AND SAGS
 - DEFLATION, DETERIORATION, AND DESCENT
 - HOLLOW, SUNKEN “SINKERS” OR TISSUE DROOP AND FAT BULGES “SAGGERS”

THE SCIENCE OF AGING SKIN

- INTRINSIC AGING- THINNING, ATROPHY, FINE LINES, AND DRYNESS
- EXTRINSIC AGING- STRATUM CORNEUM THICKENING, MOTTLED PIGMENTATION, DULLNESS, DRYNESS, WRINKLES, AND LAXITY
- INCREASED WRINKLES DUE TO MUSCLE CONTRACTURE
- BONY LOSS MAKE EYES APPEAR ROUND AND SMALLER

VISIBLE SIGNS OF AGING





GETTING STARTED- PATIENT CONSULTATION

- ENSURE PATIENT HAS A MIRROR
- WHILE PATIENT IS HOLDING MIRROR, ASK THEM WHAT THEY PERCEIVE TO BE THEIR PROBLEM AREAS ON THE FACE
- POINT OUT BOTH ATTRACTIVE AREAS AND THOSE THEY FEEL NEED IMPROVEMENT
- NOTE FACIAL ASYMMETRY AT BASELINE
- UNDERSTANDING THE STANDARD IMAGE OF YOUTH GUIDES PROVIDER RECOMMENDATIONS
- TAKE PHOTOS!

BUILDING A DAILY ROUTINE

- COSMECEUTICALS (1984)
 - A COSMETIC PRODUCT IN WHICH THE ACTIVE INGREDIENT IS MEANT TO HAVE BENEFICIAL PHYSIOLOGICAL EFFECT DUE TO AN ENHANCED PHARMACEUTICAL ACTION WHEN COMPARED TO AN INERT COSMETIC
- KLIGMAN STANDARDS
 - DOES IT PENETRATE (THE STRATUM CORNEUM)?
 - DOES WE KNOW HOW IT WORKS (MECHANISM OF ACTION)?
 - DOES IT SHOW CLINICAL SIGNIFICANCE (IN STUDIES AND TRIALS)?

WHO NEEDS A COSMECEUTICAL?

- ANYONE WHO THINKS THEY DO!
- COUCH ANALOGY
 - SLIP COVERS- COSMECEUTICALS
 - STRUCTURAL- FILLERS/NEUROTOXIN



WHY SHOULD WE STAY INFORMED?

Average US woman uses 15 different cosmetic products a day



Each with 10-50 ingredients



Therefore, average woman applied 150—750 chemicals daily

GOALS OF COSMECEUTICALS



Protect from UV
damage



Reduce free radical
formation



Improve skin barrier



Brighten and even
skin tone



Smooth texture,
reduced pore size,
decreased fine lines



Stop the shine

Bonalanza B. Making Sense of Cosmeceuticals. Next Steps in Dermatology. Published May 25, 2019. Accessed November 19, 2024.

<https://nextstepsinderm.com/derm-topics/making-sense-of-cosmeceuticals/>

Levin J, Momin SB. How much do we really know about our favorite cosmeceutical ingredients?. *J Clin Aesthet Dermatol*. 2010;3(2):22-41.

PILLARS OF ROUTINE FACIAL CARE

- CLEANSING, MOISTURIZING, PREVENTION, PROTECTION
 - PREVENT AND PROTECT IN THE MORNING
 - REPAIR AND RESTORE IN THE EVENING
- MOST SUN DAMAGE RESULTS FROM EVERYDAY, INCIDENTAL ULTRAVIOLET EXPOSURE
- SKIN TYPE: NORMAL, DRY, OR OILY

CLEANSING

- HYGIENE- THE PRACTICE OF KEEPING ONESELF AND ONE'S SURROUNDINGS CLEAN IN ORDER TO PREVENT ILLNESS AND DISEASE
- IT HAS EVOLVED TO ALSO BE A RELAXING PRACTICE AND WAY TO IMPROVE SKIN HEALTH AND APPEARANCE

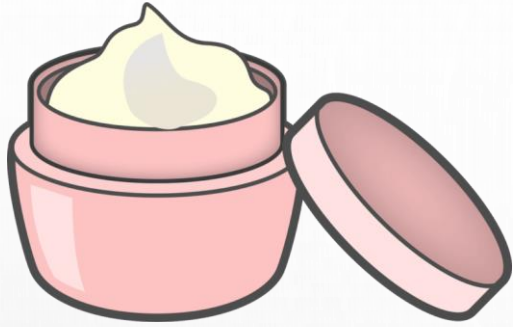


CLEANSERS

- MOST ENVIRONMENT IMPURITIES AND COSMETICS ARE NOT WATER SOLUABLE
 - PLAIN WATER WILL NOT ADEQUATELY CLEANSE THE SKIN
- SOLUTIONS EMULSIFY IMPURITIES INTO FINER PARTICLES MAKING FAT SOLUBLE IMPURITIES WATER SOLUBLE
- SKIN CLEANSERS: LOWER THE SURFACE TENSION ON THE SKIN AND REMOVE DIRT, SEBUM, OIL FROM COSMETIC PRODUCTS, MICROORGANISMS, AND EXFOLIATED CORNEUM CELLS IN AN EMULSIFIED FORM
- GOOD CLEANSERS WILL NOT DAMAGE OR IRRITATE THE SKIN
 - EVEN BETTER IF HYDRATING

CLEANSERS

- FORMULA'S VEHICLE SHOULD IDEALLY SUPPORT A SPECIFIC SKIN TYPE
 - OILY- GEL-BASED
 - DRY/COMBINATION- CREAM OR LOTION-BASED
- EXFOLIATION, THROUGH CHEMICAL OR PHYSICAL MEANS, IS THE PROCESS OF REMOVING EXCESS CORNEOCYTE BUILDUP
 - COMMON CHEMICAL EXFOLIANTS- GLYCOLIC, LACTIC, AND MALIC ACIDS, KNOWN AS A-HYDROXY ACIDS (AHAS), AND SALICYLIC ACID
- BOTTOM LINE: CLEANSE 2X DAILY WITH GENTLE (HYDRATING) CLEANSER THEN CONSIDER EXFOLIANT AS NEEDED



MOISTURIZERS

- HUMECTANTS DRAW WATER INTO THE STRATUM CORNEUM FROM THE ENVIRONMENT AND DERMIS BELOW
- OCCLUSIVE AGENTS ACT AS A BARRIER TO TRANSEPIDERMAL WATER LOSS
- IN ALMOST ALL CASES, PRODUCTS CONTAIN BOTH HUMECTANTS (HYALURONIC ACID, UREA, AND ALLANTOIN) AND OCCLUSIVES (PETROLATUM, MINERAL OIL, AND LANOLIN)

MOISTURIZERS AND SENSITIVE SKIN

- IT IS ESTIMATED THAT 50% OF WOMEN AND 40% OF MEN VIEW THEMSELVES AS HAVING SENSITIVE SKIN TO SOME DEGREE.¹⁵
 - SENSITIVE SKIN- HIGHLY REACTIVE, ITCHY, UNCOMFORTABLE, RED, AND DRY AND IS EXACERBATED BY THE ENVIRONMENT (ULTRAVIOLET RADIATION, TEMPERATURE, AND WIND), TOPICAL MEDICINAL AND COSMETIC PRODUCTS, POLLUTION, STRESS, AND HORMONES
- OILY SKIN- OIL IN WATER FORMULATIONS TEND TO BE LIGHTWEIGHT GELS, LOTIONS, AND SERUMS
- DRY/COMBINATION SKIN- WATER IN OIL FORMULATIONS MAY BE OINTMENTS OR CREAMS

HYALURONIC ACID IN MOISTURIZER

- HYALURONIC ACID (HA)- BIOLOGIC HUMECTANT, RETAINING WATER IN THE SKIN
 - TOPICAL HA IN A SERUM FORMULATION PROVIDES EXCELLENT SKIN HYDRATION
 - THE GRADUAL LOSS OF EPIDERMAL HYALURONIC ACID IS THE MOST STRIKING HISTOCHEMICAL CHANGE OBSERVED IN AGING SKIN
- A WELL-FORMULATED HA SERUM CAN VISUALLY IMPROVE SKIN PLUMPING AND IMPROVE SKIN HYDRATION BY 55% AS MEASURED BY CORNEOMETRY DUE TO AN INCREASE IN DERMAL HYALURONAN IN ALL FITZPATRICK SKIN TYPES⁴
- ALONE AND IN COMBINATION WITH AHAS, PEPTIDES, AND ANTIOXIDANTS

VITAMIN C

- MOST ABUNDANT ANTIOXIDANT IN HUMAN SKIN
- DESPITE HIGH DOSES OF ORAL SUPPLEMENTATION, ONLY A SMALL FRACTION OF VITAMIN C WILL BE BIOLOGICALLY AVAILABLE AND ACTIVE IN THE SKIN
- HAS ANTIOXIDATIVE, PHOTOPROTECTIVE, ANTIAGING, AND ANTIPIGMENTARY EFFECTS
- THE OPTIMAL CONCENTRATION OF VITAMIN C DEPENDS ON ITS FORMULATION
 - REPUTABLE PRODUCTS OF VITAMIN C AVAILABLE ARE IN THE RANGE OF 10-20%

VITAMIN C

- L-ASCORBIC ACID IS THE MOST BIOLOGICALLY ACTIVE AND WELL STUDIED (OXIDISES EASILY)
 - RESISTANT FORMS- MAGNESIUM ASCORBYL PHOSPHATE, SODIUM ASCORBYL PHOSPHATE, ETHYL ASCORBIC ACID, ASCORBYL GLUCOSIDE
 - AMBER BOTTLE IN DARK CABINET TO PREVENT OXIDATION
 - CONSIDER APPLYING AT NIGHT
- CLINICAL STUDIES ON THE EFFICACY OF TOPICAL FORMULATIONS OF VITAMIN C REMAIN LIMITED
 - CHALLENGE LIES IN FINDING THE MOST STABLE AND PERMEABLE FORMULATION IN ACHIEVING THE OPTIMAL RESULTS

SUNSCREEN AND SPF

- APPROXIMATELY 80% OF SKIN AGING ON THE FACE CAN BE ATTRIBUTED TO ULTRAVIOLET (UV) EXPOSURE¹⁵
- ZINC OXIDE OR AVOBENZONE- MOST EFFECTIVE ACTIVE INGREDIENTS FOR BLOCKING OUT BOTH ULTRAVIOLET A AND ULTRAVIOLET B
- PROVIDES PROTECTION AGAINST NOT ONLY ERYTHEMA BUT ALSO PHOTOAGING, DYSPIGMENTATION, DNA DAMAGE, AND SKIN CANCER
- BEST PROTECTION IS PHYSICAL PROTECTION
 - SHADE, CLOTHING, SUNGLASSES, ETC.
- SUN PROTECTION FACTOR (SPF) ≥ 30 BROAD-SPECTRUM MINERAL TINTED SUNSCREEN

CHOOSING AN SPF

- INCREASING LITERATURE INDICATES A NEED FOR PHOTOPROTECTION AGAINST THE BROAD SPECTRUM OF ELECTROMAGNETIC RADIATION (UV, VL, AND IR)
- MOST TARGET UVB AND SOME UVA
- ZINC OXIDE AND TITANIUM DIOXIDE CAN PROTECT AGAINST VL BUT ONLY WHEN THEY ARE PIGMENTARY GRADE AND NOT MICRONIZED

RETINOIDS (TRETINOIN)

- SYNTHETIC FORM OF VITAMIN A
 - USED SINCE 1969
- EFFECTIVENESS OF RETINOIC ACID CHEMISTRY DERIVED FROM BINDING RECEPTORS THAT MODULATE THE CELLULAR PROCESSES OF PROLIFERATION AND DIFFERENTIATION
- RESULT IS UPREGULATION OF COLLAGEN AND GLUCOSAMINOGLYCANS, LEADING TO IMPROVED FIRMNESS AND ELASTICITY

TRETINOIN

- IN A STUDY PUBLISHED IN THE *JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY*, THE APPLICATION OF PRESCRIPTION 0.05% TRETINOIN DURING A 12-MONTH PERIOD RESULTED IN CLINICAL IMPROVEMENT IN PHOTOAGED SKIN BY STIMULATION OF DERMAL COLLAGEN SYNTHESIS AND ANGIOGENESIS⁹
- KNOWN COMMON SIDE EFFECTS- PRURITUS, APPLICATION SITE IRRITATION, ERYTHEMA, AND PEELING

RETINOL



The prescription all-trans retinoic acid is ~10 times stronger than the commercially available retinol at identical concentrations



Benefit of low irritation potential when used regularly



TO SUM IT UP- COSMECEUTICALS

Little real science with finished product

Few efforts at adequate double blind placebo controlled trials

Placebo control probably not possible

Products may be excellent moisturizers hoping to be something more

Stick with retinoids and sunscreen at minimum

Penetration > mechanism > cost

TOPICAL LIGHTENING TREATMENTS

- IN MANY CULTURES, HYPERPIGMENTATION INCREASES THE PERCEPTION OF AN AGED APPEARANCE TO A GREATER DEGREE THAN WRINKLES
- A COMBO OF HYDROQUINONE (HQ) AND RETINOID PLUS EXFOLIATION AND SUN PROTECTION DAILY HELPS WITHIN 8-12 WEEKS
 - STUDIES HAVE SHOWN THAT HQ AND RETINOID COMBINATIONS DO BETTER THAN RETINOIDS ALONE
- MAINTAIN WITH “BRIGHTENING” AGENT- KOJIC ACID, AHAS, LICORICE ROOT, AND WATER-SOLUBLE DERIVATIVES OF VITAMIN C (FOUND IN A VARIETY OF PRODUCTS FROM CLEANSERS TO TONERS AND MOISTURIZERS)

ACNE VULGARIS

- INFLAMMATION OF PILOSEBACEOUS UNITS, FOLLICULAR KERATINIZATION, ANDROGENS, AND *CUTIBACTERIUM ACNES* (*C. ACNES*)
- FACE, TRUNK, OCCASIONALLY BUTTOCKS
- MOST FREQUENT IN ADOLESCENTS- ~85%
- OPEN AND CLOSED COMEDONES, PAPULOPUSTULES, NODULES, CYSTS
- RESULTS IN PITTED, DEPRESSED, OR HYPERTROPHIC SCARS
- DRUGS- LITHIUM, GLUCOCORTICOIDS, OCPS, ETC
- COMEDONES ARE REQUIRED FOR A DIAGNOSIS OF ANY TYPE OF ACNE, THEY ARE NOT A FEATURE OF ACNE-LIKE CONDITIONS (E.G. ROSACEA, PO DERM)

ACNE

- TREATMENT
 - TOPICALS- ANTIBIOTICS (CLINDAMYCIN, MINOCYCLINE), BENZOYL PEROXIDE, SALICYLIC ACID, RETINOIDS (ADAPALENE, TRETINOIN, TRIFAROTENE, TAZAROTENE)
 - CONSIDER COMBO OPTIONS
 - ORALS- ANTIBIOTICS (DOXYCYCLINE, MINOCYCLINE, SARECYCLINE), ANTI-ANDROGENS (SPIRONOLACTONE, OCPS), ISOTRETINOIN
 - ADJUNCTIVE- ILK FOR NODULES/CYSTS, SA PEELS

SEBORRHEIC DERMATITIS

- COMMON, CHRONIC DERMATOSIS CHARACTERIZED BY ERYTHEMA AND SCALING, WHICH OCCURS IN AREAS WHERE SEBACEOUS GLANDS ARE MOST ACTIVE (FACE, SCALP, PRESTERNAL AREA, AND BODY FOLDS)
 - ORANGE-RED OR GRAY-WHITE SKIN WITH “GREASY” OR WHITE, DRY, SCALING MACULES AND PAPULES OF VARYING SIZES
- ASSOCIATED WITH PROLIFERATION OF *MALESSEZIA FURFUR* AND IMMUNE RESPONSE
- TENDS TO BE DIFFUSE ON SCALP, SCATTERED AND DISCRETE ON THE FACE, AND NUMMULAR, POLYCYLIC OR ANNULAR ON THE TRUNK
- FACE- HAIR-BEARING AREAS- BEARD, EYEBROWS, EYELASHES

SEBORRHEIC DERMATITIS

- TREATMENT
 - SHAMPOOS- SELENIUM SULFIDE, KETOCONAZOLE, CICLOPIROX
 - TOPICALS- LOW POTENCY TOPICAL STEROID
 - IF SEVERE- CONSIDER ORAL FLUCONAZOLE
 - MAINTAIN WITH SHAMPOOS ONCE WEEKLY AND CONSIDER TOPICAL CALCINEURIN INHIBITOR DAILY AS NEEDED OVER TOPICAL STEROID

ROSACEA

- COMMON, CHRONIC INFLAMMATORY ACNEIFORM DISORDER OF THE FACIAL PILOSEBACEOUS UNITS
- INCREASED REACTIVITY OF CAPILLARIES LEADING TO FLUSHING AND TELANGIECTASIA
- RUBBERY THICKENING OF NOSE, CHEEKS, FOREHEAD, OR CHIN
 - CAUSED BY SEBACEOUS HYPERPLASIA, EDEMA, AND FIBROSIS
- ONSET 30-50 Y/O, F>M
- TRIGGERS- HOT LIQUIDS, SPICY FOODS, ALCOHOL, SUN EXPOSURE, STRESS
- NO COMEDONES

ROSACEA

- OCULAR ROSACEA
 - “RED EYES”- CHRONIC BLEPHARITIS, CONJUNCTIVITIS, AND EPISCLERITIS
 - CONSIDER DOXYCYCLINE
- RHINOPHYMA
 - SURGERY OR LASER SURGERY
- TREATMENT
 - METRONIDAZOLE CREAM OR GEL
 - AZELAIC ACID GEL
 - IVERMECTIN CREAM
 - ORAL DOXYCYCLINE
 - SEVERE CASES- CONSIDER ORAL ISOTRETINOIN AND ORAL IVERMECTIN

PERIORIFICAL DERMATITIS

- DISCRETE 1-2 MM ERYTHEMATOUS PAPULOPUSTULES AND ECZEMATOUS SCALY PATCHES CONFLUENT IN THE PERIORAL OR PERIORBITAL SKIN
- PREDOMINANCE IN YOUNG WOMEN
- VARIANT OF ROSACEA
- TREATMENT
 - TOPICAL METRONIDAZOLE OR CLINDAMYCIN 2X DAILY
 - ORAL DOXYCYCLINE OR MINOCYCLINE 100 MG 2X DAILY X2 MONTHS
- RECURRENCE IS HIGH

TINEA FACIEI

- DERMATOPHYTOSIS OF FACIAL SKIN
- WELL-CIRCUMSCRIBED ERYTHEMATOUS PATCH WITH ELEVATED BORDER AND CENTRAL REGRESSION
- MOST COMMONLY MISDIAGNOSED DERMATOPHYTOSIS
- TREATMENT- TOPICALS (-AZOLES, TERBINAFINE, CICLOPIROX), SYSTEMICS IN TREATMENT FAILURES (TERBINAFINE, ITRACONAZOLE, FLUCONAZOLE)
- ASSOCIATED WITH TINEA INCOGNITO
 - OCCURS WHEN TINEA FACIEI TREATED WITH TOPICAL CORTICOSTEROIDS AND CAUSES A DERMATOPHYTIC FOLLICULITIS
 - REQUIRES SYSTEMIC ANTIFUNGALS

The background is a light gray gradient. It features several realistic water droplets of various sizes, some with highlights and shadows, scattered across the frame. A faint, large, circular, textured pattern is visible in the upper center, resembling a lens flare or a subtle watermark.

ADVANCED AESTHETIC TREATMENTS

CHEMICAL PEELS

- REMOVES A PREDICTABLE, UNIFORM THICKNESS OF DAMAGED SKIN
 - ALLOWS FOR NORMAL WOUND HEALING AND SKIN REJUVENATION, MINIMIZES COMPLICATIONS (SCARRING AND UNWANTED PIGMENTARY CHANGE)
- THIRD MOST COMMONLY PERFORMED NONINVASIVE COSMETIC PROCEDURE, AFTER BOTULINUM TOXINS AND SOFT TISSUE FILLERS
- INDICATIONS ARE PRIMARILY COSMETIC
- TREATMENT FACTORS- TREATMENT INDICATION, DESIRED DEPTH OF ABLATION, PERTINENT EXAM FINDINGS, FITZPATRICK SKIN TYPE, AND RELEVANT DERMATOLOGIC HISTORY OF THE PATIENT

INDICATIONS FOR CHEMICAL PEELS

- LENTIGINES
- EPHELIDES
- MELASMA
- ACNE
- ROSACEA
- SCARRING (ACNE, TRAUMATIC, SURGICAL)
- ACTINIC DAMAGE
- SUPERFICIAL AND MEDIUM DEPTH RHYTIDES
- ACTINIC KERATOSES

DIFFERENT TYPES OF CHEMICAL PEELS

- SUPERFICIAL
- INTRAEPIDERMAL AND DE JUNCTION DISRUPTION POSSIBLE
 - AHAS SUCH AS GLYCOLIC (30–50%), LACTIC (10–30% OR MANDELIC (40%)
 - BHAS SUCH AS SALICYLIC ACID (30%)
 - AKAS SUCH AS PYRUVIC ACID (50%)
- MEDIUM
- FULL THICKNESS EPIDERMIS INTO PAPILLARY DERMIS
 - SALICYLIC ACID (>30%, MULTILAYER APPLICATION)
 - GLYCOLIC ACID (70%, WITH OR WITHOUT PRETREATMENT PRIMER SUCH AS JESSNER'S SOLUTION)
 - TCA (30–50%, MONOLAYER APPLICATION, WITH OR WITHOUT PRETREATMENT PRIMER SUCH AS JESSNER'S SOLUTION)

CHEMICAL PEELS CONTINUED

- DEEP
- FULL THICKNESS EPIDERMIS, PAPILLARY DERMIS AND MID-RETICULAR DERMIS
 - TCA (>50%, MONOLAYER APPLICATION, WITH PRETREATMENT PRIMER SUCH AS JESSNER'S SOLUTION)
 - BAKER-GORDON PHENOL PEEL (DETERGENT, CROTON OIL AS AN EPIDERMOLYTIC AGENT, PHENOL, AND WATER FOR DILUTION TO 50–55% PHENOL)
- LASERS OVERTAKING NEED FOR DEEP CHEMICAL PEELS
- SUPERFICIAL PEELS GAINING POPULARITY DUE TO MILD PROPERTIES, MINIMAL SIDE EFFECTS, AND COSTS COMPARED TO LASERS

OTC CHEMICAL PEELS

- LOW CONCENTRATION, SUPERFICIAL CHEMICAL PEELING AGENTS
 - 3–10% GLYCOLIC ACID
 - MILD FRUIT-DERIVED ACIDS (CITRIC, TARTARIC, OR MALIC)
- MILD, GRADUAL EXFOLIATION OVER SEVERAL WEEKS
 - USE AS PRE-PEEL PRIMERS TO AUGMENT EFFECTS OF HIGHER CONCENTRATION PEEL

MICRONEEDLING

- UTILIZES INSTRUMENTS CONTAINING ROWS OF THIN NEEDLES THAT PENETRATE THE DERMIS TO A UNIFORM DEPTH, CREATING A CONTROLLED SKIN INJURY
- INDUCES RAPID HEALING MICROPUNCTURES WITH SUBSEQUENT COLLAGEN AND ELASTIN FIBER PRODUCTION STIMULATION, RESULTING IN SKIN REMODELING
- TREATMENT INDICATIONS- VARIOUS FORMS OF SCARS, ALOPECIAS, DRUG DELIVERY, HYPERHIDROSIS, STRETCH MARKS, AND MORE

CONTRAINDICATIONS TO MICRONEEDLING

- ACTIVE ACNE, ESPECIALLY INFLAMMATORY LESIONS
- ACTIVE HERPES LABIALIS OR OTHER LOCALIZED INFECTION IN THE TREATMENT AREA, INCLUDING WARTS.
- MODERATE-TO-SEVERE CHRONIC SKIN DISEASES SUCH AS ECZEMA OR PSORIASIS
- PATIENTS WITH EXTREME KELOIDAL TENDENCIES
- IMMUNOSUPPRESSED PATIENTS, INCLUDING PATIENTS ON CHEMOTHERAPY
- CARE SHOULD ALSO BE TAKEN IN PATIENTS NEAR CONCOMITANT CHEMODENERVATION (BOTULINUM TOXIN) INJECTION SITES TO AVOID UNWANTED TOXIN DIFFUSION

MICRONEEDLING

- MOST COMMONLY USED INSTRUMENTS
 - FIXED NEEDLE ROLLERS
 - ELECTRONICALLY POWERED PENS WITH DISPOSABLE TIPS
- THE SIZE OF THE NEEDLES SHOULD BE SELECTED APPROPRIATELY BASED ON THE TREATMENT INDICATION AND THE TREATMENT LOCATION.
 - LONGER NEEDLE LENGTHS (1.5 TO 2.0 MM) FOR TREATING SCARS
 - SMALLER NEEDLE LENGTHS (0.5 TO 1.0 MM) FOR AGING SKIN AND RHYTIDES
 - THICK, SEBACEOUS SKIN, LIKE THAT FOUND ON THE NOSE, MAY REQUIRE DEEPER PENETRATION THAN DELICATE, PERIOCCULAR SKIN

Microneedling	
Advantages	Disadvantages
Short healing time compared to other options	Evidence-based recommendations for using microneedling are lacking; most recommendations are based on anecdotal reports and small studies
Relatively lower-cost procedure.	Head-to-head trials against the various other treatment options are sparse
Simple technique that is easy to master	
Well tolerated by patients	
Minimal risk of post-inflammatory hyperpigmentation	
Can be combined with other acne scars treatments like extraction, chemical peeling, microdermabrasion, and fractional resurfacing	

LASER



Surgical

CO₂, Erbium (Er:YAG), Holmium

Indicated for: SKs, AKs, nevi, sebaceous adenomas, warts, neurofibromas, scars, skin resurfacing or rejuvenations, etc



Vascular Lasers

DYE, Nd:YAG laser, argon, alexandrite, diode, holmium, krypton, ruby, copper vapor

Telangiectasias, spider veins

NEUROTOXINS

Botulinum toxin type A

Single most popular cosmetic procedure in the U.S.

- Used to smooth dynamic wrinkles
- Blocks nerve impulses to the muscles, causing them to relax
- Expressions soften and the dynamic wrinkles greatly reduced

NEUROTOXINS



Results last 3-6 months



Can return to daily activities immediately after treatment



Can also treat excessive sweating, neck bands, and more



FILLERS

Corrects facial wrinkles
and lines

Longevity of injectable
fillers varies from 1 month
to 5 years based on the
physicochemical properties,
fabrication strategy, and
function mechanism

Anesthetics such as
lidocaine are widely used
with dermal fillers to
minimize the discomfort
during injection

DIFFERENT TYPES OF FILLER

- **HYALURONIC ACID (HA) FILLERS**
 - OCCURS ENDOGENOUSLY IN HUMANS, WITH ABOUT HALF OF IT CONTAINED IN THE SKIN
 - MOST INJECTABLE FILLER PRODUCTS ARE HA BASED, AND PRESENTLY THE MOST WIDELY UTILIZED.
 - AFTER SUPERFICIAL INJECTION, HA CAN ENHANCE SKIN TONE AND ELASTICITY, WHILE SUPPLEMENTS OF VITAMINS, AMINO ACIDS, AND PEPTIDES CAN PROVIDE NUTRITIONAL INGREDIENTS TO SUPPORT ITS POSITIVE EFFECTS.
- **POLY (L-LACTIC ACID) (PLLA)**
 - BIODEGRADABLE, BIOCOMPATIBLE AND SYNTHETIC POLYMER
- **CALCIUM HYDROXYLAPATITE (CAHA)**
 - CALCIUM HYDROXYLAPATITE (CAHA) IS A COMPONENT OF HUMAN BONE AND TEETH, AND SYNTHETIC CAHA HAS BEEN UTILIZED IN MEDICINE AS A BIODEGRADABLE AND BIOCOMPATIBLE SUBSTANCE FOR MORE THAN 20 YEARS.

FUTURE OF FILLERS

- ZHAO *ET AL.* REPORTED THE DEVELOPMENT OF AN INJECTABLE HYDROGEL DERIVED FROM HUMAN ACELLULAR ADIPOSE TISSUE THAT MAY TRIGGER THE GENERATION OF HUMAN ADIPOSE STEM CELLS (HASCS)⁷
 - MAY NOT ONLY PHYSICALLY FILL OR CAUSE A HOST RESPONSE, BUT MAY ALSO REGENERATE NORMAL HUMAN SOFT TISSUE AND FURTHER DELAY THE NATURAL AGING PROCESSES

The background is a light gray gradient. It features several realistic water droplets of various sizes, some with highlights and shadows, scattered across the frame. A faint, large circular pattern, resembling a ripple or a stylized 'C', is centered in the background.

EMERGING COSMECEUTICAL OPTIONS

COLLAGEN

- AGING SKIN CHARACTERIZED BY A REDUCTION IN COLLAGEN SYNTHESIS AND A DECREASE IN SKIN VASCULARITY
 - LEADING TO DECREASED ELASTICITY AND INCREASED WRINKLES
- TOPICAL CREAMS WITH COLLAGEN ARE DESIGNED TO ENHANCE SKIN HYDRATION, FIRMNESS/ELASTICITY
 - TOPICAL CREAMS HAVE LIMITED ABILITY TO PENETRATE THE SKIN

ORAL COLLAGEN SUPPLEMENTS

- ORAL ADMINISTRATION OF COLLAGEN STIMULATES HYALURONIC ACID PRODUCTION IN THE DERMAL FIBROBLAST CELLS
- ORAL COLLAGEN SUPPLEMENTS, PARTICULARLY HYDROLYZED COLLAGEN (HC) PEPTIDES,
 - SAFE AND COST-EFFECTIVE COMPARED TO OTHER COLLAGEN-BASED STRATEGIES.
- A RECENT STUDY DEMONSTRATED THAT HC IMPROVES SKIN HYDRATION AND ELASTICITY¹⁴
 - NOT ALL SOURCES OF HC HAVE THE SAME EFFICACY. EVEN AT THE SAME DOSE AND DURATION OF ADMINISTRATION, SOME SPECIFIC SOURCES OF COLLAGENS ARE MORE EFFECTIVE THAN OTHERS
- FURTHER STUDIES ARE REQUIRED TO DETERMINE THE PROPER SOURCE AND THERAPEUTIC DURATION OF HC AGAINST SKIN AGING.

BAKUCHIOL

- DISTILLED FROM SEEDS AND LEAVES OF BABCHI PLANTS
- CLAIMS TO BE CLINICALLY COMPARABLE TO RETINOL W/O IRRITATION
 - INDUCES SIMILAR GENE EXPRESSION IN THE SKIN
 - ANTIOXIDANT ANTI INFLAMMATORY
 - INCREASES CELL TURNOVER, STIMULATES COLLAGEN
- DOES NOT BREAK DOWN IN THE SUN
- SAFE IN PREGNANCY (?) NO DATA
- SENSITIVE SKIN PATIENTS
- WILL IT REPLACE RETINOIDS (?)

PEPTIDES/EXOSOMES

- NOT FDA-REGULATED, TRIALS ARE IN PROGRESS TO EVALUATE SAFETY AND EFFICACY
- MOST FORMULATIONS ON THE MARKET ARE IN A MOISTURIZING SOLUTION PACKED WITH OTHER INGREDIENTS (E.G. VITAMIN C, HYALURONIC ACID, OR RETINOIDS)
- COSMETIC BENEFITS, WOUND HEALING, HYDRATION, TEXTURE, ANTIAGING, IMPROVEMENT IN DYSPIGMENTATION
- SUGGESTED TO BE USED IN CONJUNCTION WITH OTHER AESTHETIC PROCEDURES IN ORDER TO PRESERVE COSMETIC OUTCOMES FOR LONGER (E.G. POST-NEUROTOXIN)
- POSTULATED THAT TOPICAL APPLICATION OF PEPTIDES WHEN COMBINED WITH A LIPOPHILIC CARRIER WILL PERMEATE THE SKIN BARRIER AND BE ABLE TO EXECUTE THEIR PHARMACEUTICAL ACTION

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