Topical Nutritional Pyramid™

Specially selected products carried by KDC within each nutritional skin grouping
Good skin health depends on several factors, including genetics, protection from the environment, and nutritional support. Sun (ultraviolet light) has the most pronounced impact on skin, with over 80% of skin aging due to sun damage. While it is important to drink plenty of water and have a healthy diet, our bodies do not have the capacity to selectively place ingested nutrients into sun-damaged as opposed to sun-protected skin.

As proof, look at the skin of your bottom, and compare this healthy skin to the thin, wrinkled, and freckled skin of your forearms or face. Therefore, in order to maintain healthy skin, we must apply reparative agents externally to the skin specifically in need. This pyramid has been developed to help you understand and sort through the confusing array of cosmetic grade rejuvenating skin product categories. Unlike basic soaps moisturizers or make up, these products are designed to have biological activity on the skin, and consumers need to understand their function to achieve maximal benefit and avoid misuse.

Items near the base of the pyramid have the greatest impact on skin health, or have the most data supporting their health benefits. Items in the different groupings complement each other and together make up a well balanced daily skin care “diet”, which should be combined with a gentle washing program. Be certain to consult with your skin care specialist on sources for your skin care products, as quality and ability to penetrate skin can vary dramatically. Skin is a magnificent but complicated living protective surface that deserves our respect and care to combat the daily ravages of ultraviolet radiation, pollution, and other skin stressors. No matter what your age or your current skin health, this organ is remarkably resilient, and it is never too late to begin maintaining the health and beauty of your skin!

Julie Kenner, MD, PhD

Dr. Kenner is a board certified dermatologist with interests in both clinical medicine and research. Dr. Kenner is active in advancing the field of medical science, and regularly publishes articles and lectures on medical topics to both the lay and professional public.
At KDC, we emphasize the importance of blocking both UVA (the "aging" rays, which come through windows and cloud cover making up 95% of the ultraviolet rays), and UVB (the "burning" rays), and provide a wide array of sunscreen choices with full spectrum blockage in low irritancy, durable cream, gel or powder formulations to suit the needs of our patients.

REMEMBER TO REAPPLY SUNSCREEN FREQUENTLY!

Solar Protection Formula® SPF 58/40 (Tizo)- Broad-spectrum chemical free water resistant sunscreen (zinc oxide and titanium dioxide only), with slight amount of color to balance white of ingredients. Suitable for those needing sturdy sun protection at any age. A favorite among sufferers of rosacea or sun spots/melasma. Comes in tint formulation as well to match the color of your skin.

NIA 24™ Sun Protection SPF 30- Broad-spectrum chemical free oil free sunscreen containing 5% Pro-Niacin, which promotes skin cell repair and regeneration. Excellent for those with rosacea or oily complexions.

Neocutis® Journee Bio-restorative Day Cream SPF 30- Broad-spectrum sunscreen that combines a unique formula of growth factors and antioxidants. Protects against premature aging due to sun while it repairs previous sun damage such as fine lines and pigmentation. Excellent for mature, post-menopausal, very sun damaged or thin skin.

Environ® Antioxidant RAD SPF 16- Broad-spectrum sunscreen that combines a unique formula of antioxidants in a comfortable moisturizing base. Excellent for everyday use for most skin types, even the most sensitive. Repairs while it protects.

ColoreScience® powdered sun protection SPF 30- Broad-spectrum chemical free water resistant powdered sun protection with differing amounts of tint to match your skin color. Wildly popular among athletes (especially golfers and tennis players), water enthusiasts (especially surfers), and children (and their moms!). Easy to apply while “on-the-go” as it is conveniently supplied in a tube with a retractable brush for quick application. Used regularly as a “reapplication sunscreen” by those who apply traditional cream-type or foundation-based sunscreens in the morning. Powder application with brush will not mess up previously applied make-up and requires no hands-on contact. Perfect formulation for leaving in car to remember to protect against sun damage while driving.

Dermacti MDR’s Acne Control SPF 30 (Lycogel)- Radically new sunscreen formulation which combines anti-acne/rosacea medication with concealer, topical vitamin antioxidants, and a tissue respiratory factor called Lycogel Complex that is designed to increase the quantity of oxygen delivered to skin cells and decrease bacteria count. Unique benefits include both treating and concealing acne or rosacea while preventing sun damage simultaneously.

Vanicream® SPF 60- Broad-spectrum chemical free sunscreen specifically designed for those with sensitive skin. Soothing moisturizing base. Excellent for those suffering from eczema or allergic dermatitis.

Elta Block® SPF 40- Broad-spectrum sunscreen designed for those with sensitive skin. Lighter weight than Vanicream, Elta Block is also excellent for children and those prone to rashes.
Of all skin products, this class of topical vitamin A is the most studied and has the broadest benefit. “All humans who care for their skin should use a sunscreen and a retinoid daily”.

Vitamin A is involved in all key functions of the skin, from protecting against skin cancers, to treating acne, milia, enlarged oil glands, excessive pigmentation and maintaining integrity and appearance. Unfortunately, ultraviolet light destroys vitamin A (as well as vitamin C) in our skin, which impairs this protection, leading to a loss of skin thickness and strength, excessive lay down of pigment and a higher risk for developing skin cancer.

The form of vitamin A with the most activity on skin is a broad class called the retinoids. The biology of retinoids is complicated, and there are many forms of retinoids. Most retinoids in skin (~80%) are in specialized storage forms (chiefly retinyl palmitate and retinyl acetate), which transform to the active nucleus-binding forms (retinol and retinoic acid [AKA, Retin A®]) in small amounts as the skin needs dictate, in a delicate and well-coordinated balance. Replenishing sun-damaged skin with the storage forms of retinoids is the most efficient and biologically natural method of replacing retinoids in the skin. If skin is replenished with only the active forms of retinoids, it can transiently or permanently overwhelm the skin, resulting in side effects, such as irritation, redness, peeling, itchiness, rash and sun sensitivity known as the “retinoid reaction”. This can sometimes happen with the storage forms of retinoids too, but is much less likely. Treatment for a retinoid reaction is to reduce (but not stop!) the quantity or quality of retinoid used on the skin (preferably switching to one of the storage forms of retinoids); be patient while the skin adjusts over a period of a few weeks to the presence of these molecules. The Environ Skin Care Line carries the most advanced and highest quality storage form retinoids available. Now all skin types, even the most sensitive, can enjoy the benefits of retinoids, in elegant and non-irritating formulations to repair and protect skin of any age. Although a theoretical risk for skin formulations, as a class of medication, retinoids should not be used if you are pregnant.

Every day retinoids: Environ carries 2 lines of everyday use retinoids. These formulas contain the storage forms of retinoids and so are able to be used at the preferred twice a day application regimen.

1) The Original line of pure vitamin A in creams or gels for all skin types, including babies.
2) The C-Quence line of pure Vitamin A plus a fat-soluble highly concentrated form of Vitamin C in a gel emulsion- an elegant and sophisticated anti-aging formula for men and women.

Both lines have low, medium, medium high, and high levels of retinoids. Even though most individuals can adjust their skin to the highest levels, some may not progress beyond the mid level. Those who cannot adjust to even the lowest level of retinoids, can use Environ’s Antioxidant Gel, which contains a non-retinoid form of vitamin A called beta carotene, which has many of the benefits of retinoids, but does not produce a retinoid reaction.

Retinoid level ratings for the Original and C-Quence retinoid lines are as follows:

**Original**

- **Lowest level**: Debut (suitable for children or babies, or those with very sensitive skin)
- **Low level**: moisture gel or mild day* / night
- **Medium level**: low oil, classic day/night, rich day/night
- **High level**: ultra day/night

**C-Quence**

- **Low level**: C-Quence 1
- **Medium level**: C-Quence 2
- **High level**: C-Quence 3
- **Highest level**: C-Quence 4**

*note: KDC does not carry the day creams, as Dr. Kenner feels that the SPF4 added to these formulations is not adequate to protect against the sun of Hawaii. Rather, she prefers clients use the night creams (continued on p.10)
Tissue Components
These are the basic components of healthy skin that become diminished with aging.
- These components include collagen, hyaluronic acid, and elastin.
- Thought to have better efficacy if placed within the skin by injection, however topical formulas are being studied.

Peptides
- Use once or twice a day
- Small fragments of full proteins, often involved in skin repair after injury, which can signal the body to carry out a variety of functions:
  - Stimulate collagen and elastin production, block muscle activity by binding to muscle receptors to diminish dynamic wrinkles.
  - Data is limited, but promising.
  - Examples: acetyl hexapeptide-3, pentapeptide-20, and palmityl oleopeptide-3.

Growth Factors
- Use once or twice a day
- Specialized signals directing cells to grow and develop into specific forms.
  - These molecules are most prominent in the earliest stages of life (such as growing fetuses), but get reactivated when there is a need for the body to regenerate itself.
  - These molecules are under active study and are believed to stimulate new collagen, new vessel formation, as well as new surface skin cell growth.
  - Examples: beta-NGF, EGF, FGF, CSF, VEGF, cytokines, etc.

Botanical Antioxidants
- Use once or twice a day
- Look for vitamin antioxidants, these plant derived molecules protect against free radical damage.
  - Examples: green tea polyphenols, coenzyme Q, lycopene, saw palmetto, feverfew, mushroom extracts.
  - Some of these molecules may also have anti-inflammatory or anti-cancer properties.

Alpha & Beta Hydroxyacids
- Use once a day, or as occasional chemical peel treatments.
  - Examples: glycolic acid, salicylic acid, and lactic acid.
  - Acid preparations made from fruits or mix with the following properties:
    - Exfoliation (removing rough and pigmented dead skin from the surface)
    - Increase epidermal thickness and increase dermal glycosaminoglycans
    - Enhance skin penetration of other skin products
    - Mild anti-acne activity (certain forms)

Vitamin Antioxidants
- Use once or twice a day
- These molecules neutralize the damaging free radicals produced in the skin by ultraviolet light, pollution, or cigarette smoke.
  - Examples include vitamin C, vitamin E, certain B vitamins, and zinc.
  - In addition to being an efficient antioxidant, some vitamin antioxidants, notably vitamin C, are involved in skin rejuvenation by enhancing collagen formation and reducing pigment production.

Retinoids
- Many forms available; the once, or preferably, twice a day. Do not use if you are pregnant. “If you have to pick two items to maintain the health of your skin, pick a broad spectrum sunscreen and a retinoid.” JK
  - The “great skin normalizers”, these specialized forms of vitamin A have been studied for decades and are known to restore function to all skin cells that have been damaged by UV light, including the cells that produce collagen, pigment, and skin integument.
  - Key functions include: protection against skin cancer, acne, wrinkles, excess oil production, and excess pigmentation; shrinkage of pores, improvement in texture and tone; overall thickness and strengthening integrity of skin.
  - Prescription forms generally have more side effects such as skin irritation, redness, peeling, and transient acne breakouts. Newer formulations designed for certain skin care lines have fewer side effects, but should still be monitored by a professional.

Sun Protection
- Use liberally and reapply frequently when actively in the sun.
  - Sunscreens need to block BOTH UVA (the “Aging rays”, which penetrate skin deeply to produce photodaging: wrinkles, dryness, brown spots, dilated blood vessels and free radical cell injury) and UVB (the “Burning rays”, which damage DNA potentially leading to skin cancer). UV rays go through windows and clouds, are present at all time of the day, and makes up 95% of the UV rays.
  - Look for sunscreen labeling to inform you on UVA and UVB protection, length of protection, and water resistance. Strive to achieve maximum protection. Reapply.
  - Wear sun protective clothing and eyewear, and keep in mind sunlight can be reflected from water, sand, and pavement.
twice a day, adding a higher SPF sunscreen to the morning application. **note: the C-Quence level achieves higher retinoid levels than the Original line. Keep this in mind if you switch from the Original line to the C-Quence line.

**Acne line-** Environ makes a formula of retinoid especially suited for acne called Sebugel A. This formula contains retinoids along with colostrum and tea tree oil to help quickly resolve the redness and inflammation of acne lesions. In addition to helping treat several of the defects known to lead to the formation of acne, retinoids are well known to help prevent and treat scars, a common side effect of acne.

**EssentiA Oil-** A high-level retinoid combined with antioxidants in an oil base especially suited for body skin. Dr. Kenner recommends **EssentiA Oil** be applied immediately following the application of a thin layer of Dermalac lotion or other AHA cream for use on the sun-damaged skin of the forearms, chest and neck. Excellent for thickening, plumping and lightening thin freckled and wrinkled sun damaged skin on the body. Once the face has been tolerized to high level retinoids, some may choose to use **EssentiA Oil** on the face at night as well. Excellent for use post laser or chemical peel procedures- often used in an oil in water “spritzer” formula to both cool and aid in the formation of new skin.

**Hydrating oil capsules-** Rich and luxurious, this compote contains several forms of retinoids along with powerful antioxidants and other ingredients to repair skin. Recommended for use once a week (or more frequently for those with very dry or damaged skin) to energize, repair and hydrate very damaged or thinned skin. Great to take on trips where travel may make skin prone to dehydration.

**Rx Retinoids-** (late stage retinoids). Prescription forms of retinoids include: **Retin A®, Differin®, Tazorac®, and Renova®.** Your doctor may choose to use these forms alone or in conjunction with the **Environ** forms of retinoids depending on your skin condition.

**Antioxidants** are molecules that prevent the oxidative damage incurred to cells by ultraviolet light, pollution and cigarette smoke. **KDC carries several in this category:**

**C-Boost-** The highest biologically active form of vitamin C available. Currently, **Environ** is the exclusive owner of this patented method of transforming water soluble vitamin C into a fat form, which not only stabilizes it, but allows it to readily traverse the skin (the typical water soluble form of vitamin C cannot get through skin). Once on the underside of skin, natural enzymes within skin convert **C-boost** back to the native and highly active form of vitamin C. In addition to being a powerful antioxidant, vitamin C is critical and necessary to the formation of collagen and prevents excess pigmentation (“sun spots”). Finally, vitamin C has a unique ability to enhance sun tolerance, thereby reducing the chance of sunburning. Excellent product for treating pigmentation, fine lines and wrinkles, and facial redness. Very well tolerated and does not, like some other forms of topical vitamin C, induce acne, cause irritation or degrade quickly.

**NIA24 Skin strengthening complex-** This pro-niacin (a form of vitamin B) containing product not only helps combat against the deleterious effects of sun on skin (such as hyperpigmentation, fine lines, thinning and poor skin integrity,) but it’s unique formula is being studied by the National Cancer Institute for development as a potential skin cancer prevention agent. In addition, KDC has found this product, in conjunction with **C-boost,** to reduce the redness of rosacea.
**ALPHA & BETA HYDROXYACIDS**

These products are NOT recommended for regular use for those with very thin or sensitive skin.

Alpha and beta hydroxy acids are a class of topical medication which come in various strengths and formulas and are designed to exfoliate dead or congested/pigmented surface skin as well as facilitate the penetration of follow-on rejuvenating skin products.

Dr. Kenner recommends these products be used post washing as toners for acne-prone or sun damaged facial skin, or as lotions/creams on dry, damaged, or calloused skin of the body, prior to the use of retinoids, antioxidants, or other reparative agents.

Periodic acid (chemical) peels may be considered for those with very congested or damaged skin, but should not be overdone so as to preserve the youthful thickness of skin. Post menopausal women, or those with rosacea, naturally thin or sensitive skin, may not be good candidates for these agents. Consult with one of the KDC staff to get advice.

Examples of AHA/BHAs carried by KDC include:

- **Dermalac lotion** - Great for dry skin of body
- **Sebutone toner** - designed for acne prone skin
- **Alpha toner mild and forte** - Toners for sun damaged skin of the face
- **Alpha cream and gel** - Great for thickened, calloused skin of body
- **Environ chemical peel system** - Controlled exfoliation under the direction of your doctor or skin care specialist for removing dead surface skin and plugged follicles - for use in treating acne or hyper pigmentation, as well as “freshening” sun damaged dull skin.

**BOTANICAL ANTIOXIDANTS**

Dr. Kenner has selected **Revaléskin™ Night Cream** to represent this category in the Nutritional Skin Pyramid.

**Revalé Night Cream** contains 1% coffeeberry®, one of the most powerful antioxidants yet discovered. This antioxidant, like the vitamin antioxidants, can protect against UV light-induced photo aging, and is used for treating pigmentation and fine lines. In addition, due to its well-tolerated moisturizing emollient base, this product is excellent for those suffering from dry skin.
KDC carries 2 broad classes of growth factors: those derived from colostrum (the first milk expressed after delivery [in this case, from a cow]), and those derived from growing fetal cells from a banked cell line. Colostrum gel contains a rich array of growth factors and immune factors to promote the production of healthy collagen and elastin as well as support the immune system of skin. Colostrum is therefore intended to reduce fine lines, smoothing and tightening skin, as well as treating and soothing inflammatory skin conditions. Excellent for those with very thin skin, women post or peri menopause who have experienced a change in the quality of their skin, or in inflammatory acne. **Environ** carries 2 forms of colostrum: **purecolostrum** or **colostrum mixed with retinoids** for those acne prone - [Sebugel A](#).

The most active growth period in any human's life is during fetal development, during which a multitude of growth factors control development. Scientists at the Medical School of the University Hospital of Lausanne, Switzerland have immortalized a cell line of fetal skin cells and captured the growth factors for use in several new skin care formulas marketed under the brand name of **Neocutis**.

Originally developed for use in wound healing and burns, as well as skin disorders such as eczema and psoriasis, the growth factors in the **Neocutis** products have also been found to be effective in skin rejuvenation due to chronological and photo aging. Formulated into gels, creams, or in combination with broad-spectrum sunscreen, these products are designed for use by those with thin skin, women post or peri menopause who have experienced a change in the quality of their skin, or post laser or chemical peel procedures. Used in combination with retinoids, growth factors offer enormous potential synergistic skin rejuvenation.

These fragments of proteins (also called polypeptides) can function in multiple ways within the skin such as mimicking the breakdown products of collagen and “tricking” skin into thinking injury has occurred so that new collagen production gets turned on, or binding to receptors to inhibit muscle movement much in the way **Botox** works. **Environ ’s Ionzyme C-Quence Eye Gel** contains three peptides, Argireline®, Matrixyl® and Dermaxyl™, which are designed to reduce the appearance of wrinkles. This eye gel is specifically formulated for use on the delicate and sensitive eye area, particularly where the crow’s feet and deep lines are visible. A topical alternative to Botulinum Toxin that is safer, milder and injection-free.

Skin contains many components, the best known being collagen, elastin, and hyaluronic acid. The former 2 ingredients provide structure to the skin, while the latter provides suppleness to skin as a unique sugar molecule capable of holding water. **Neocutis Hyalis** is formulated with 1% pharmaceutical grade hyaluronate for maximum results, and is a multi-functional skincare product used to revitalize, hydrate, and soothe skin. Excellent for those with very dry skin, those traveling frequently on airplanes, or for post procedure (chemical or laser peel) wound healing and soothing.