Anatomy of Skin
and its Defense, Breakdown,
and Fortification
Healthy Skin

Human skin is a remarkable organ, the body's largest, but it is often taken for granted.

- An adult's skin comprises 15% to 20% of the total body weight.
- Each square centimeter has 6 million cells, 5,000 sensory points, 100 sweat glands and 15 sebaceous glands*.
- Skin is constantly being regenerated. A cell is born in the lower layer of the skin called the dermis. For about two weeks, the cell migrates upward until it reaches the epidermis.
- For another two weeks, the cell gradually flattens out and continues to move to the surface of the epidermis.
- When it reaches the surface, it dies and is shed.
- Two billion to three billion skin cells are shed daily.

* Sebaceous glands are microscopic glands in the skin that secrete an oily/waxy matter, called sebum, to lubricate the skin and hair.
Epidermis

The epidermis is the topmost layer of the skin. It is the first barrier between you and the outside world.

- Total thickness of the epidermis is usually about 0.5 - 1 mm.
- At the lowermost portion of the epidermis are immature, rapidly dividing cells called keratinocytes. As they mature, keratinocytes lose water, flatten out and move upward.
- At the end of their life cycle, keratinocytes reach the surface of the epidermis. At this point the epidermis consists mainly of dead keratinocytes, hardened proteins (keratins), and lipids, forming a protective crust.
- The skin completely renews itself every 3 - 5 weeks.
Skin Defense

The skin is the first line of defense against dehydration, infection, injuries and temperature extremes.

- Skin cells can detoxify harmful substances with many of the same enzymatic processes the liver uses.
- The unbroken surface also prevents infectious organisms from penetrating into systemic circulation.
- As gatekeeper, the skin absorbs and uses nutrients applied topically. Because it cannot completely discriminate, the skin may absorb synthetic chemicals often present in soaps and skin care products, which can be toxic or a skin irritant.
Skin Breakdown

Abrasion, excess moisture, over pressure, dryness, toxins and injuries can overwhelm the epidermis reducing its ability to protect the dermis and the body.

- Abrasion or injury of the skin prematurely removes the epidermis layer exposing the inner layers. The exposure of these layers inflames the nerve endings and allows toxins and bacteria easier access to the circulations system.

- Sweat glands are critical for temperature control and removing of toxins from the skin. However, in an enclosed environment where the sweat does not evaporate away. The pooled moisture breaks down the epidermis layer and floods hair follicles and sweat glands leading to infected hair follicles, heat rash, and infected injury sites.

- The epidermis is renewed every 15-60 days, through exfoliation which removes dry or damaged skin of the outer layer to allow newer cells to be visible. Premature destruction of the epidermis does not give the inner layers enough time for regeneration.
AdaptSkin Fortifies & Protects

Proper Epidermis nutrition and protection feeds the cells of the basal layer allowing their healthy progression to the Epidermis.

- **AdaptSkin™** contains all natural human compatible proteins and lipids that fortifies and protects the epidermis.
- **AdaptSkin™** anhydrous (water free) formulation produces an effective barrier to excess moisture, containments, and bacteria from penetrating the epidermis, hair follicles, and sweat glands.
- **AdaptSkin’s** ingredients are clinically proven barriers to secondary infection, allowing bi-directional vapors permeability, provides thermal insulation, and is free of particulate and toxic contaminants.
- The sealing and protective properties of **AdaptSkin™** combined with its soothing and hydrating characteristics make it a necessity to insure the health and vitality of your residual limb.
Adaptskin™ 50: Medium viscosity for more general applications and daily use. Adaptskin 50 uses cyclomethicone to enhance the skin’s barrier protection and leave a lighter, silky-smooth feel when applied.

Adaptskin™ 90: Thicker, more concentrated product for areas of localized skin damage/irritation or areas of high abrasion and stress. Adaptskin 90 is a lipid-rich formulation providing extended topical coverage and protection.