Skin is not just a surface envelope for the really important functions within. It is a complex physiological system that affects every other system in the body.
Feeding the Skin
Oils and More

By Kondanna (Barry Kapke)

Massage training typically gives considerably more focus to learning about muscles and bones than it does to the skin. But skin is not just a surface envelope for the really important functions within. It is a complex physiological system that affects every other system in the body. This integumentary system protects, contains, feels, communicates, absorbs, digests, filters, secretes, excretes, heats, cools, and breathes. Skin is what massage therapists most directly contact, and it is important to realize our impact both on it and the whole person.

Integument means "covering" or "skin." This system consists of the skin and its appendages — sebaceous (oil) glands, sudoriferous (sweat) glands, hair, and nails. Skin is the largest organ of the body and is comprised of three layers. The epidermis is the outer segment, containing many sheet-like layers of tissue and melanocytes — the cells that give color to the skin. The epidermis also contains pores, openings for hair, and specialized glands. This surface layer of the skin has no blood vessels, and its cells must derive oxygen and nutrients by diffusion of tissue fluids from the underlying dermal layer.

Those epithelial cells closest to the dermis thrive and multiply, with new cells pushing away the older cells. As these older cells get farther away from the nourishment of the dermis, they starve and die. These dead cells are constantly being sloughed off and the epidermis is continuously renewing itself. The lifespan of an epidermal cell is 21 to 27 days. The thickness of the whole epidermis, with its four or five layers, is less than the width of a hair.

Directly beneath and connected to the epidermis is the dermis (or corium). This middle layer is made of connective tissue, a semisolid mixture of fibrous proteins (collagen, reticulum, and elastin), water, and a gel called "ground substance." Collagen is the main component of connective tissue and constitutes nearly 70 percent of the dry weight of the dermis. It gives form and firmness to the skin. Elastin fibers are responsible for giving the skin its elasticity and resilience. Reticulum fibers interconnect the collagen bundles. Embedded within the dermis are blood vessels, lymphatic vessels, nerve endings, hair follicles, and sweat glands. Macromolecules, called proteoglycans, act to maintain water balance in the skin. The dermis accounts for more than 90 percent of the skin's mass and provides most of its physical strength.
The subcutaneous layer is comprised largely of adipose, or fatty, tissue attached to the dermis. It helps to cushion and insulate the body, is a source of fuel, and serves to store fat-soluble vitamins A, D, E, and K.

Sebum, a mixture of fats, cholesterol, proteins, and electrolytes, is secreted through the ducts of the sebaceous glands, which are in the dermis near hair follicles. There is a sebaceous gland for every hair on the body. Normally, a thin coating of sebum lubricates and protects the hair and is responsible for the hair’s flexibility and shine. In hairless areas of the body — the lips, glans penis, and labia minora — sebaceous glands discharge directly onto the skin. There are no sebaceous glands in the palms and soles. In addition to lubricating both the hair and the epidermis, sebum provides a protective layer that is mildly antibacterial and antifungal, conditions the skin, and prevents excess evaporation of water. An excess of sebum, triggered by hormones or disease, can produce an oily skin, whereas an underproduction, caused by nutritional factors or exposure to UV radiation, may make skin dry. Massage with light friction stimulates the sebaceous glands, causing an increase in sebum production that improves the condition, texture, and tone of the skin. This, along with enhanced circulation, energetic balance, and the fact of being relaxed, all contribute to that characteristic glow we see following a massage.

There are so many important aspects and functions of the skin, but here I am focusing on the skin as a semipermeable barrier through which substances enter, and have effect on, the body. In a previous article, I discussed this in relation to therapeutic baths. Here, I want to look at the use of massage oils and their impact.

**Oil as a Medium**

For a great number of massage therapists, oils and lotions are the medium of the profession, functioning to reduce friction between the client’s skin and the therapist’s hands or forearms. Some forms of massage, such as ayurvedic massage, apply copious amounts of oil, while others, like deep-tissue massage, use only enough to protect the skin. For relaxation and circulatory approaches, sufficient lubrication to glide easily over the skin is wanted. Of course, many forms of bodywork, from shiatsu to ortho-bionomy, do not work directly on the skin and so do not use lubricants.

Oil is liquid fat. It is pure caloric energy. If a wick is placed in a container of oil and lit, the oil fuels the fire and leaves no residue. Because it distributes heat evenly, it is used in cooking. The ayurvedic writer Harish Johari points out that oil tempers or eradicates friction and conducts heat readily without evaporating.

Containing proteins, carbohydrates, fatty acids, vitamins, and minerals, oil is a nutrient for the skin and is absorbed through pores and openings in the hair follicles. Hair follicles are connected with nerve fibers, which the oil nourishes. Oil prevents dryness, increases suppleness, and prevents conditions of premature aging. It softens the skin, promotes smoothness, reduces friction, distributes heat evenly, and provides a smooth luster to the skin. Residual oil on the skin following a massage protects against the harshness of the external environment. Oils are a perfect medium for penetrating the skin’s semipermeable barrier. Substances that are fat-soluble can easily penetrate the epidermis and, upon reaching the dermis, are absorbed into systemic circulation. Vegetable, nut, and seed oils are often used for massage, and oils with an oleic acid content in the 24 percent to 60 percent range absorb readily into the skin. Oleic acid enhances transport of bioactive compounds through the skin where they can have an effect on the body. Pharmaceutical companies are increasingly looking at such transdermal administration of drugs because the skin can absorb the substance slowly over a period of time. It is now common to find nicotine patches to help smokers quit their addiction through a graduated withdrawal, estrogen patches used in the treatment of menopausal symptoms, and vasodilator drugs for increasing coronary blood flow. All dermal patches deliver the drug they are intending to release into the system by way of a concentrated amount of oleic acid. The conditions of a typical massage session — heat, moisture, and friction — increase the absorption potential of a carrier oil.
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Unrefined, cold-pressed vegetable, nut, and seed oils can be nourishing to the skin. On the other hand, ingredients like mineral oil and isopropyl alcohol can clog pores and deplete vitamins and nutrients. Steryl and cetyl alcohol, which are often used as emulsifiers and stiffening agents in creams and lotions, don’t nourish the skin but don’t harm it either. When buying commercial massage oils and lotions, take the time to read the ingredients. Avoid preservatives such as BHT, BHA, and EDTA. Also make certain that the oil is not hydrogenated. If an oil or an ingredient is not something you’d want to eat, you probably don’t want to put it on your skin either.

The purity of an oil is an important consideration. Just as the quality of motor oil you put in your car is significant to its performance, so is the quality of what you put on your client’s skin. Choosing organic, unrefined food-grade oils may be the difference between serving your client a balanced home-cooked meal or fast food. Oils that have not been processed in any way will retain their original vibrant color and unique fragrance. The process to remove color and essentials from an oil, called deodorization, requires a temperature of 450 degrees. Dangerous trans fatty acids begin forming at 260 degrees.

Manufacturers can buy cold-pressed oils and sell them as such even though they further treat them to have longer shelf lives. An organic cold-pressed oil, filtered only and unprocessed, will have a rich golden, green, red, orange, or yellow color and will retain its fragrance. If your oil is color-free and fragrance-free, it has been altered.

All oils contain all three types of lipids (fats) — saturated, monounsaturated, and polyunsaturated — but in varying degrees. Generally, an oil is classified based on which predominates. Coconut oil and ghee (clarified butter) are saturated oils. Corn, soy, sunflower, walnut, cottonseed, palm kernel, and safflower oils are polyunsaturated. New varieties of sunflower and safflower have been developed that are high in oleic acid and thus are monounsaturated. These monounsaturated varieties will be labeled “monounsaturated” or “high in oleic acid.” The degree to which an oil is monounsaturated is determined according to the amount of oleic acid present. It is also the presence and quantity of oleic acid in an oil that determines how absorbable that oil will be on the skin. Monounsaturated oils include olive, avocado, almond, apricot kernel, peanut, canola, and sesame oils.

Saturated fats from plant sources, such as coconut, cottonseed, and palm kernel oils and cocoa butter, are heavy oils and are solid at room temperature. Monounsaturated oils are liquid at room temperature but solid when refrigerated. Polyunsaturated oils are liquid regardless of temperature. Polyunsaturated oils are less desirable than monounsaturated oils and tend to go rancid rather quickly. The addition of vitamin E, or wheat germ oil, can act as a preservative. When oils are not in use, most should be refrigerated or at least kept in a cool place out of direct sunlight. Cold-pressed, untreated, filtered-only organic oils will stay stable from six months to one year, and some even longer.

Another important aspect of oils we eat or absorb through our skin is fatty acids. Fatty acids are needed to help maintain the health of cell membranes, improve nutrient use, and establish and control cellular metabolism. They also provide the raw materials that help in the control of blood pressure, blood clotting, inflammation, body temperature, and other body functions.

Unprocessed polyunsaturated oils contain the essential fatty acids (EFAs) that our body is unable to provide. Omega-3 fatty acids are beneficial to the heart, increasing the concentrations of good cholesterol (high density lipoproteins, or HDL) while decreasing the concentrations of bad cholesterol (triglycerides). They “reduce blood viscosity, lower lipid levels, reduce clotting, lower blood pressure, and prevent ischemia...” The omega-3 oils not only minimize circulatory disorders but also encourage blood flow to tissues damaged by lack of circulation. A good source of omega-3 is alpha-linolenic acid, a fatty acid found in flax seed (53 percent), chia seed (30 percent), pumpkin seed (15 percent), rapeseed (10 percent), and walnut (5 percent) oils. Of these, pumpkin seed oil and walnut oil would be the most appropriate choices for massage purposes.
Another EFA is linoleic acid, an omega-6 source. Linoleic acid is a blood-thickener, encouraging blood clot formation. Linoleic acid and gamma-linolenic acid (GLA) produce prostaglandins. Prostaglandins are substances found in every cell that are needed for the body's overall health maintenance, and they must be replenished constantly. The body cannot produce EFAs, so they must be obtained through healthy food sources.

In applying oils and butters to the body, we are feeding the skin. Oils are emollient, which means that they soothe, soften, and make supple. This helps with hard, dry, rough, non-resilient skin. Hand in hand with softening is the property of moisturizing. Moisturizing oils are said to be humectant. Demulcent oils help to soothe sensitive skin that has been damaged, and vulnerary oils act to heal injuries and wounds. Astringents aid in tightening and toning the skin. Tonic oils invigorate and stimulate.

Some oils work primarily at the surface mantle of the skin, while others penetrate the sebum barrier quite easily and may carry nutrients and other bioactive substances into the deeper tissues and bloodstream. In anointing with oil, you are nourishing as well as nurturing.

Keep in mind that people have varying degrees of sensitivity to foods and to compounds in their environment. Knowing that a client has an allergic response to wheat or to nuts, or a sensitivity to additives such as essential oils, is important information that will determine which oils, if any, you might use with that person. Of course, many times clients may not know they have an allergic reaction until they have one. If you notice a discoloration, or other visible change in an area that was just massaged, it is likely a reaction to the lubricant being used. Wash and dry the affected area immediately. Unfortunately, many times the allergic response may occur 24 to 48 hours after exposure to the allergen. Generally, the more pure and unrefined the lubricant is, the less likely it is to be a problem.

Oil, as a therapeutic medium, should be of benefit not only to the client, but the therapist as well, as both receive the qualities of that oil. If you use 2-3 ounces of oil per client, by month's end you've been arm-deep in a lot of oil. Take care that you are using healthy oils. It is sometimes the case that prolonged exposure to the same oil may cause dermatitis or some other sensitivity to arise. Don't keep using the same oil over and over, just as you wouldn't eat the same meal over and over.

Much research is done concerning oils in our diet, but very little is to be found about transdermal assimilation of oil. That transdermal migration of lipid-soluble substances occurs and enters the bloodstream is not questioned, but the degree to which EFAs, and other nutritive substances, received in this way are of significant benefit has not been studied to my knowledge. I hope such studies will take place. In the meantime, we can all hopefully agree that substances we would not want to eat, or are not healthy to eat, are best not directly entering the bloodstream via the skin. From an energetic point of view, there is no doubt that the life energy of whole foods is more vital than that of processed or artificial substances.

Hopefully, this provides a useful starting place for making decisions about what to put on your skin and that of your clients. Now go experiment.

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References
5 While shiatsu and ortho-bionomy are typically performed on a fully or partially clothed client, both forms can be, and often are, integrated into an oil massage format.
9 Ibid, p. 123.
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