Skin analysis - with the support of modern instruments

The skin analysis as a main component of the cosmetic treatment forms the basis for successful skin-specific concepts. A large supply of different instruments may facilitate the skin diagnosis. However, what are the specific performance features of these instruments?

In the past, a precise skin analysis involved years and years of gaining experience. Nowadays, instruments facilitate the start into a pretty complicated field. As the basis for a cosmetic treatment, the skin analysis primarily is a help. In addition, it also may represent an independent service. However, what measurements are really useful?

Significant data

The characteristic features which are significant for the cosmetic treatment are skin moistness, sebum, barrier function of the horny layer, elasticity, surface structure, complexion and the pH-value of the skin surface. Most frequently, the skin moistness and sebum content are measured. Both the features are needed to characterize the types of skin: dry and moist skin, respectively low-fat and oily skin. A third and also very important feature is the barrier function which can be determined by means of the transepidermal water loss (TEWL).

A high TEWL value signifies e.g. that the skin extensively evaporates water which is a symptom for a skin barrier disorder. On the other hand, also substances and germs may penetrate from the outside which increases the risk of irritations, inflammations and allergies. As a rule, a high TEWL value is connected to both low skin moistness and low sebum values.

It is important to pay attention when the readings are taken. Basically there are three possible readings. **Measurements on the untreated skin** are taken several hours after the last skin cleansing to allow the hydrolipid layer to regenerate. The **treated skin should also be measured** several hours after the last application which allows the water contained in creams to evaporate and the surface cream layer to disappear. The values measured now consist of the endogenous moistness and the effects of the moisturizing substances of the cream applied, a fact which also applies more or less for the measuring of the fat content. Standard values mean that the skin care applied appropriately balances any possible deficit in the skin. Lower values imply that the product was not sufficiently applied or even may not be suitable, and higher values signify that the amount should be reduced or a less concentrated prescription be chosen.

The pre-and-post-treatment-comparison means that the measuring is taken before and after the treatment in order to document a successful therapy. However, the results gained using this method frequently look better than they really are. As already mentioned above, the skin moistness value taken right after the application of water-containing creams is too elevated. When applying creams which do not contain water, the skin moistness content will take some time to reach its maximum value. In case of skin with a tendency to an increased fat content, the fat values which can be apparently low right after the treatment may already show quite unfavorable readings some hours later. Vice versa the same may apply for dry and low-fat skin.

Informative readings

Interesting findings on the efficiency of skin care products can be gathered, when the application of products used on a long-term base is stopped before the measurements are taken. A period of one to two days will be enough to adequately distinguish between short-term and long-term effects. A comparison of different products will thus facilitate the selection of a specific prescription.

However, it is recommended for beauty institutes to concentrate on measurements which are rather independent of humidity and temperature, respectively the seasons. For this reason, readings of the transepidermal water loss (TEWL) are less appropriate.

Choosing the adequate device

Recommended for beauty institutes are devices which allow a fast and uncomplicated measuring and avoid error readings. A further very important aspect is that the device should be portable in order to limit the investment to one unit per institute for several cubicles. Modern devices have a low energy demand so that one single battery will eventually last for more than a whole year. In these cases there is no need for an adapter.

Basically there are three different types of measuring devices:

Devices equipped with a probe in combination with specific software to be connected to the computer allowing differentiated readings. These devices are recommended for major institutes, universities and hospitals. Besides, there are combined devices with several probes however based on the same measuring principles and with the same sensitivity as the single devices. As a rule, these devices are offered without the comfortable computer connection and complicated software which makes them a lot less expensive than the single probe instruments.

The control units of modular systems may alternatively be equipped with different probes.

Interpreting the readings

In order to facilitate the reading of measurements, the device manufacturers frequently supply abundant data and information. This may be a major help to begin with as depending on the body part, different standard values may be taken. However, it usually only takes several days to develop a certain sensitivity for the typical measurement results. Sometimes, the devices are equipped with software which is adapted to a specific product program showing product recommendations. The advantage is that the products can be taken out of the shelf right away. However, there is also a disadvantage: due to the very individual features of the skin, the product recommendations may not work out at a hundred per cent. Consequently, it is recommended to trust one's own observation – even if using a perfect measuring device.

The skin analysis readings should be implemented several times in order to characterize different parts of the skin, to find out the different zones of mixed skin and to exclude reading errors which may e.g. be caused by hairs. It is also important to know that these readings only signify momentary results. To determine the efficacy of a certain treatment requires multiple readings taken over a longer period of time.

In this connection, the composition of the products used should also be taken into consideration: A number of substances increase skin moistness and oil content on a short-term base. On the long run, however, they may reduce the natural ability for regeneration.

Make-up and camouflage may also falsify the readings. Therefore, the skin should only be measured after the cleansing or after the basic care was applied. Nevertheless, added effects due to the make-up or camouflage used have to be considered which means that the basic skin care should be adjusted.

When changing the skin care from occlusive products to physiological cosmetic products which support the skin's ability for self-regeneration, the skin in the first days subjectively may appear drier than before. However, measurements show that the skin moistness indeed has increased and the reason for it is that a smooth surface film frequently is felt as a moist skin. Differences between reading results and subjective perception may occur time and again. It is recommended to inform your customers about the necessary and effective long-term skin care.

Is it worth the investment?

Highly developed measuring devices are quite expensive and the investment should be well planned. One of the possible advantages may be that both good equipment and a well-established professional consultation underline the respectability of the beauty institute. Not nearly every institute offers skin analyses, a fact which allows to develop the institute's own profile and to gain new customers.

Before investing in a new device it is recommended to scrutinize the measuring principle. Try to estimate whether the readings are realistic and try to collect the appropriate technical information before making the decision on purchasing a device. Contact a neutral specialist in case of doubts.

Keep in mind that it is well worthwhile dealing with this subject.

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