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(54) **Method for multi-site skin testing**

Verfahren zum Prüfen der Haut an mehreren Stellen

Méthode de test cutané à emplacements multiples

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## Description

**[0001]** The present invention relates to a method of enabling an analysis taking into account exposure of at least one external body portion to the environment. In one example, the invention may be used to determine the effects of environmental factors on the skin, hair, and/or nails. One other aspect of the invention relates to a method of enabling a determination of at least the initial effectiveness of a treatment for an external body portion.

**[0002]** US 5,640,957 discloses an ultraviolet radiation protection evaluator, where a first reading is taken on untreated skin, and a second reading is taken on skin treated with a sunscreen, in order to characterized the sunscreen in relation to natural skin protection.

**[0003]** People use a wide range of beauty products to enhance their physical appearance. In one example, cosmetic products are applied to the skin for rectification and prevention of damage caused by factors such as stress, aging, and the environment. These cosmetic products are selected based on their ability to treat particular types of skin conditions. To select the proper cosmetic products for a particular person, one must assess the person's skin and identify the types of rectification and prevention that are needed.

**[0004]** Conventional techniques for assessing skin, however, often do not provide an accurate representation of an individual's skin condition. Some of these techniques rely on comparisons between a person's skin and the skin of an average person of the same age. Where the person's skin is different from that of the average person at her age, inappropriate cosmetic products may be selected for her.

**[0005]** Other conventional skin assessment techniques involve comparisons between a person's skin and the ideal skin of a much younger person, such as a model. In one such technique, an image of the person's face is compared with an image of the model's face to aid in the selection of products for rectification and prevention. Because the attributes of the model's skin are unattainable by the person, she may feel discouraged and dissatisfied with her appearance. Further, excessive quantities of a product or products of excessive strength may be recommended, even though such excess product quantities or strengths might not achieve a desired result.

**[0006]** The invention provides a method according to claim 1.

**[0007]** In another aspect, the first information may be representative of one or more conditions of the first external body portion of the subject at approximately a first time and the second information may be representative of one or more conditions of the second external body portion of the subject at approximately the first time. According to this aspect, the method may further comprise obtaining third information, which is representative of the one or more conditions of the first external body portion of the subject at approximately a second time, obtaining fourth information, which is representative of the one or

more conditions of the second external body portion of the subject at approximately the second time, and determining a difference between the third information and the fourth information. The second time may occur at least a period of time after the first time.

**[0008]** In yet another aspect, the difference between the first information and the second information may be compared with the difference between the third information and the fourth information so as to enable an analysis taking into account impact of the one or more environmental factors over at least the period of time.

**[0009]** In a further aspect, a treatment may be selected for the first external body portion based on the difference between the first information and the second information.

**[0010]** In a still further aspect, there is a method of determining at least the initial effectiveness of a treatment. The method may comprise obtaining first information, which is representative of one or more conditions of a first external body portion of a subject at approximately a first time, obtaining second information, which is representative of one or more conditions of a second external body portion of the subject at approximately the first time, and determining a difference between the first information and the second information. The method may further comprise obtaining third information, which is representative of the one or more conditions of the first external body portion at approximately a second time, obtaining fourth information, which is representative of the one or more conditions of the second external body portion at approximately the second time, determining a difference between the third information and the fourth information, and comparing the difference between the first information and the second information with the difference between the third information and the fourth information. The second time may occur at least a period of time after a treatment of the first external body portion is initiated.

**[0011]** It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

**[0012]** The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate several exemplary embodiments of the invention and together with the description, serve to explain certain principles of the invention. In the drawings,

Fig. 1 is an exemplary flowchart illustrating a method in accordance with an exemplary embodiment of the invention;

Fig. 2 is a schematic showing a first external body portion where information may be obtained according to an exemplary embodiment of the invention;

Fig. 3 is a schematic showing a second external body portion where information may be obtained according to an exemplary embodiment of the invention;

Fig. 4 is a schematic showing an alternative second external body portion;

Fig. 5 is an exemplary flowchart illustrating a method in accordance with an exemplary embodiment of the invention;

Fig. 6 is an exemplary flowchart illustrating a method in accordance with an exemplary embodiment of the invention;

Fig. 7 is an exemplary graphic illustration in accordance with an exemplary embodiment of the invention;

Fig. 8 is an exemplary flowchart illustrating a method in accordance with an exemplary embodiment of the invention;

Fig. 9 is an exemplary graphic illustration in accordance with an exemplary embodiment of the invention;

Fig. 10 is an exemplary flowchart illustrating a method in accordance with an exemplary embodiment of the invention;

Fig. 11 is an exemplary block diagram of a computer system;

Fig. 12 is an exemplary block diagram of a client computer; and

Fig. 13 is an exemplary block diagram of a provider computer.

**[0013]** Reference will now be made in detail to exemplary embodiments of the invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

**[0014]** One exemplary method of the invention enables an analysis taking into account exposure of one or more external body portions to the environment. Some examples of the method might relate to one or more external body portions that have received an application of a product, while other examples of the method might relate to situations where a product has not been applied.

**[0015]** The flowchart in Fig. 1 illustrates one example of a method. As shown, the method may comprise obtaining first information representative of one or more conditions of a first external body portion of a subject (step 20), obtaining second information representative of one or more conditions of a second external body portion of the subject (step 22), and determining a difference between the first information and the second information (step 24). In this embodiment, the second external body portion may be normally less exposed to one or more environmental factors than the first external body portion. In other words, during the life of the subject, the second external body portion has been substantially less exposed to one or more environmental factors than the first external body portion. For example, the second external body portion could be normally covered with clothing and/or exposure to the environment could be blocked by another portion of the body. In another example, the second external body portion could be an area that is not normally shaved, while the first external body portion could be an area that is regularly shaved, such as the

skin of the face or legs.

**[0016]** The one or more environmental factors may be ultraviolet radiation, extreme temperature, wind, pollution, and/or shaving, for example. Further, the one or more environmental factors may comprise a plurality of environmental factors.

**[0017]** In one embodiment, the first external body portion of step 20 may comprise skin and/or hair located on parts of the body that are normally subjected to environmental factors. Claim 1 specifies a skin region located on the face of the subject, such as skin region S1 located on the forehead, as shown in Fig. 2. Information about one or more conditions of this external body portion may be obtained using any known acquisition device, as described below. In addition (or in the alternative) to obtaining information about one or more conditions of skin on the forehead, information may also be obtained about the condition(s) of other areas of the face, as well as other skin and/or hair regions normally exposed to environmental factors. As explained below, information may also be obtained about the condition(s) of fingernails and/or toenails.

**[0018]** The conditions of the external body portion may comprise texture, elasticity, dryness, cellulitis, sweating, aging, wrinkles, exfoliation, desquamation, homogeneity of color, micro-circulation, shininess, softness, smoothness, hydration, sebum production, cleanliness, irritation, redness, vasomotion, vasodilation, vasoconstriction, pigmentation, and/or freckles.

**[0019]** The second external body portion of step 22 may comprise skin, nails, and/or hair located on parts of the body that are not normally subjected to substantial environmental factors, as compared to the first external body portion. Claim 1 specifies include skin located on the upper buttocks of the subject, such as the skin region S2 shown in Fig. 3, and/or skin located on an inner surface of an upper part of at least one of the subject's arms, such as the skin region S2' shown in Fig. 4, for example.

**[0020]** Although Fig. 3 shows one example of a skin region S2 located on the "upper buttocks," this skin region is not limited to the specific location shown in Fig. 3, and may include a skin region from any other location on the lower back and/or upper buttocks that is not normally subjected to substantial environmental factors. Likewise, information may be obtained from skin located on areas of the subject's arms other than skin region S2' shown in Fig. 4, as well as skin, nails, and/or hair from other body parts that are not normally subjected to substantial environmental factors.

**[0021]** Information about one or more conditions of the second external body portion may be obtained using any known acquisition device, as described below. For example, the same type of acquisition device could be used to obtain the information about the first and second portions.

**[0022]** The second external body portion may be subject to the same nutrition, hormones, and/or chronological aging as the first external body portion, and the sec-

ond external body portion may be either substantially less exposed to environmental factors or substantially free from exposure to environmental factors, as compared to the first external body portion. Thus, a comparison of skin, nails, and/or hair from these two locations may isolate the effects of environmental factors on the first external body portion by eliminating effects based on nutritional factors, hormonal factors, and/or chronological aging factors.

**[0023]** Although Fig. 2, and Figs. 3 and 4, respectively, show examples of areas of the body that might be considered as locations for the first and second body portions, there are many alternative locations that could be selected. For example, the first external body portion and the second external body portion may comprise hair or portions of hair on the subject's scalp. For example, the first external body portion may be hair or a portion of hair from an area that is normally exposed to environmental factors (e.g., free end portions of hair on a subject's scalp), whereas the second external body portion may be hair or a portion of hair that is normally not substantially exposed (e.g., root portions of hair on a subject's scalp). These portions may be more readily defined for subjects with longer hair and/or hair having a somewhat constant styling. In a further example, the first external body portion may comprise hair or portions thereof from the scalp and the second body portion may comprise hair or portions thereof from the armpit.

**[0024]** In another example, the first external body portion and the second external body portion may comprise different portions of a single hair, fingernail, and/or toenail. For example, the first external body portion may comprise a tip of a subject's fingernail and the second external body portion may comprise a root portion of the same fingernail.

**[0025]** Alternatively, the first external body portion may comprise a portion of a subject's fingernail and the second external body portion may comprise a portion of a subject's toenail.

**[0026]** In a further embodiment, the first external body portion may comprise hair and/or skin located on the scalp of the subject and the second external body portion may comprise hair and/or skin located in the pubic area of the subject.

**[0027]** It should be understood that although the method illustrated in Fig. 1, in its broadest sense, may include the obtaining of information for a pair of external body portions, the method may also include the obtaining of information for more than two external body portions.

**[0028]** Several exemplary embodiments of the invention will now be described with reference to Fig. 1.

**[0029]** According to one embodiment, each of the obtaining of the first information (step 20) and the obtaining of the second information (step 22) may comprise acquiring a quantitative measurement of one or more conditions. A quantitative measurement may also be acquired for each of a plurality of conditions.

**[0030]** The quantitative measurement may be chosen

from any known quantitative measurement, such as corneometry, dermal torque measurement, pH measurement, colorimetry, sebumetry, lipometry, confocal measurement, epidermal turnover measurement, skin layer thickness measurement, blood microcirculation measurement, desquamation rate measurement, water loss measurement, skin hydration measurement, scoring with a densiscore-type tool, and measurement of sudatory function. An appropriate acquisition device may be used for each measurement. Examples include torque measuring devices, pH sensors, and other conventional devices that could be used to acquire information about the condition of skin, nails, and/or hair.

**[0031]** The quantitative measurement may be performed by the subject and/or by at least one provider. The provider may be a cosmetologist, a clinician, or other professional. Further, the measurement may be performed in the subject's home or at a location remote from the user's home, such as a kiosk, store, or the office of a cosmetologist or clinician.

**[0032]** In one example, a subject and/or provider may measure the pH of the skin on the subject's forehead and upper buttocks by pressing a conventional pH sensing device in place against the respective locations for a period of time. The pH sensing device may provide a numerical pH reading or may present the pH data as a color on a coded scale. One example of a pH sensing device includes a device configured to obtain data in a "kinetic approach" wherein a continuous measurement and/or a series of measurements is/are taken over a period of time to enable a plot of a pH curve over time. For example, such a kinetic device could be used to analyze liquid in contact with the skin, such as skin secretions.

**[0033]** In another example, a provider, such as a clinician or cosmetologist, may measure the elasticity of the skin on a subject's face and on an inner surface of an upper arm using a dermal torque measuring device.

**[0034]** There are numerous ways in which the difference between the first and second information could be determined in accordance with step 24 of Fig. 1. When the first and second information are in quantitative (e.g., numeric) forms, the determination might include a calculation, such as a subtraction, of one of the first and second information from the other. The calculation could be performed by one or more users, optionally with the assistance of a computer or any conventional calculation device, or by any type of device capable of making the calculation. For example, the device used to initially acquire the information might be configured to calculate the difference. In another example, information initially acquired by the device could be transferred to a computer (e.g., obtained by the computer) and the computer could make a determination of the difference. In another example, the difference could be determined by viewing one or more visual representations (e.g., graphical illustrations) of the conditions.

**[0035]** In certain circumstances (e.g., when the condition relates to a qualitative property), the condition of each

external body portion could be "graded" to give the condition a quantitative value that could then be used in a calculation of the difference. In other circumstances where it might be difficult to assign a quantitative value for the condition of each external body location, the difference determination might comprise specifying a gradation of the difference between the conditions of the locations.

**[0036]** The determining of the difference between the first information and the second information (step 24) may comprise determining one or more differences between a quantitative measurement of the condition of the first external body portion and a quantitative measurement of the condition of the second external body portion. With reference to the above examples, a subject may determine the difference between the pH at each external body location by comparing the numerical pH values or pH color indications that were measured. Likewise, a provider may determine the difference between the elasticity of the skin at each external body location by comparing numerical readings provided by a dermal torque measuring device.

**[0037]** According to another embodiment of the method shown in the flowchart of Fig. 1, each of the obtaining of the first information (step 20) and the obtaining of the second information (step 22) may comprise acquiring at least one image of a respective external body portion of the subject. The at least one image may be chosen from photographs, scanned images, ultrasonic images, magnified images, wrinkle projections, and imprints. A plurality of images may be acquired.

**[0038]** The images may be acquired by the subject and/or by at least one provider in the subject's home or at a location remote from the subject's home.

**[0039]** In one example, a subject may photograph (e.g., with a film camera or digital camera) the skin on her face and photograph the skin on her upper buttocks. The subject may then transfer the photographs to a provider for analysis, described below. There are many different ways in which the photographs could be transferred. For example, the subject may deliver the photographs to the provider in person, send them using a package delivery service, such as a postal service or a courier, or send them electronically. To enable electronic transmission of the images, the subject may use a digital camera and/or an image scanner (e.g., a flat bed document scanner) to acquire the images of her skin and/or hair, then send the images using a computer network, for example by e-mail.

**[0040]** In another example, a provider may acquire ultrasound images and/or imprint images of the skin on the subject's face and the skin on her upper buttocks. The provider could analyze the images and/or send them to another provider for analysis. Again, the images may be delivered in person, sent using a postal or package delivery service, or sent electronically.

**[0041]** Each of the obtaining of the first information (step 20) and the obtaining of the second information

(step 22) may further comprise analyzing one or more images to ascertain one or more qualitative properties and/or quantitative properties relating to the condition(s) of the external portion. A plurality of qualitative properties and quantitative properties may be ascertained from the analysis.

**[0042]** The analyzing of the images may comprise counting sebaceous glands, counting sweat glands, and/or visualizing imprints in the at least one image.

**[0043]** With reference to the above examples, a provider may analyze photographs by counting sebaceous glands, counting sweat glands, and/or identifying skin coloration. Also, the provider may analyze an ultrasound image and/or imprint image of the skin by counting sebaceous glands, counting sweat glands, and/or examining wrinkles.

**[0044]** The determining of the difference between the first information and the second information (step 24) may comprise determining at least one difference between one or more properties ascertained from analyzing an image of the first external body portion and one or more properties ascertained from analyzing an image of the second external body portion. For example, there could be a determination of the difference between the number of glands in the skin at each location, and/or the difference in coloration, and/or wrinkling of the skin at each location.

**[0045]** According to a further embodiment of the method shown in the flowchart of Fig. 1, each of the obtaining of the first information (step 20) and the obtaining of the second information (step 22) may comprise acquiring at least one external body portion sample. The at least one sample may be chosen from skin cells, hair cells, fingernail cells, toenail cells, secretions, bioanalytical content, bacteriological content, and enzymatic content. A plurality of samples may be acquired.

**[0046]** The acquiring of the at least one sample may be carried out using any known technique, including a technique using adhesive collection, absorption, and/or abrasion. An appropriate acquisition device may be used for each technique. For example, the sample collection could occur at the skin region S1 of Fig. 1, at the skin region S2 of Fig. 2, and/or at the skin region S2' of Fig. 3.

**[0047]** In an adhesive collection technique, a support, such as a plastic strip, coated on one side with adhesive may be placed with its adhesive side in contact with a body portion, such as the skin, for example. Upon removal of the adhesive support, materials on the surface of the skin, such as skin cells and/or skin excretions, are retained on the adhesive and may be subsequently analyzed, as described below.

**[0048]** In an absorption technique, a porous support may be used to collect solid, liquid, and/or gaseous components of the body portion, such as the outer skin layer (i.e., stratum corneum), for example. The support may be formed of a polymer, a woven fabric, or a nonwoven fabric. Alternatively, the support may comprise an inorganic compound, such as ceramic or rock wool.

**[0049]** Such a support may be formed of ceramic material, for example.

**[0050]** To acquire a sample through absorption, the support may be placed in contact with a body portion, such as the outer skin layer, for example, for a period of time. Over even a short length of time, liquid secretions from the skin could become retained in the pores of the support and these secretions could be analyzed upon removal of the support.

**[0051]** In one arrangement, the support may be mounted on an adhesive substrate and placed on the skin to provide contact with the skin for a period of time sufficient to acquire a usable sample. The sample may then be extracted from the support for analysis or evaluated while it is retained on the support.

**[0052]** In an abrasion sample collection technique, an abrasive support may be used to collect solid, liquid, and/or gaseous components of the skin and/or hair. The support may comprise a scraping device utilizing one or more blades. Alternatively, the support may comprise a roughened surface formed of an inorganic compound, such as ceramic or rock wool.

**[0053]** To acquire a sample through abrasion, the support may be placed in contact with a body portion, such as the skin, nail, and/or hair, and then moved while maintaining the contact, for example in a linear or twisting motion. As the support abrades the surface of the skin, nail, and/or hair, components of the skin/nail/hair are collected in the support. Where a bladed device is used, the body portion sample may be retained between a pair of blades. With an inorganic support, the body portion sample may be retained in the pores of the support. After the sample is collected, the sample may be extracted from the support for analysis and/or the sample may be analyzed while still retained on the support.

**[0054]** The samples may be acquired by the subject and/or by at least one provider in the subject's home or at a location remote from the subject's home.

**[0055]** In one example, a subject may acquire samples of her skin and/or hair using an adhesive strip, an absorptive collection device, and/or an abrasive collection device. The subject may then transfer the samples and/or information about the samples to a provider for analysis. For example, the subject may deliver the samples to the provider in person, send them using a package delivery service, such a postal service or a courier, or send information about them electronically. To enable electronic transmission of information about the sample, the subject may use an electronic device to acquire the sample. Such a device may be configured to obtain a sample and generate transmittable data based on the sample's content. The user may then send the data to the provider using a computer network, for example by e-mail or another conventional input/output device.

**[0056]** In another example involving nails and/or hair, a sample of nails and/or hair could be acquired by cutting and/or scraping a sample.

**[0057]** In another example, a provider may acquire

samples using any conventional sample collection device. The provider who collected the samples could either analyze the samples or transmit the samples and/or information about the samples to another provider for analysis. Again, the samples may be delivered in person or sent using a postal service or a package delivery service, or information about them may be sent electronically.

**[0058]** When one or more samples are collected, each of the obtaining of the first information (step 20) and the obtaining of the second information (step 22) may further comprise analyzing the sample(s) to ascertain one or more qualitative properties and/or quantitative properties relating to the condition(s). The qualitative properties may relate to the presence or absence of one or more components, and the quantitative properties may relate to the relative quantities of one or more components in the sample. A plurality of properties may be ascertained from the analysis.

**[0059]** The analyzing of the samples may be carried out using any known technique, such as optical, chemical, and biological analysis techniques. For example, the analysis technique may be chosen from gas chromatography/mass spectrometry, gas chromatography/mass spectrometry/mass spectrometry, liquid chromatography/mass spectrometry, liquid chromatography/mass spectrometry/mass spectrometry, ultraviolet observation, fluorescence observation, infrared observation, Raman spectrophotometric observation, and X-ray observation. When multiple analysis techniques are used, the same sample could be analyzed in each technique and/or separate samples could be analyzed.

**[0060]** In another example, a provider may analyze the samples by utilizing one or more analysis techniques to identify the types of components, such as dead skin cells, sebum, and/or sweat, for example, that are present in the sample and to determine their relative quantities.

**[0061]** When the samples are analyzed to determine one or more of their properties, the determining of the difference between the first information and the second information (step 24) may comprise determining at least one difference between one or more properties ascertained from analyzing the sample(s) of the first body portion and one or more properties ascertained from analyzing the sample(s) of the second body portion. For example, the provider may determine the difference in the number of dead skin cells in the samples from each location or determine the difference in relative amounts of a particular enzyme in the samples from each location.

**[0062]** As used herein, the term "obtaining" (for example, in step 20 and step 22 of the exemplary method illustrated with the flow chart of Fig. 1) could include any activity wherein information is received regardless of how the information has been conveyed to the recipient. For example, information could be obtained as a result of a receipt or any form of information transmission including, but not limited to, electronic delivery (e.g., e-mail, facsimile transmission, transfer of information via a computer network, uploading and/or downloading of data, etc.),

physical shipment (e.g., via a postal service or parcel delivery service), or personal exchange. Obtaining of information could also relate to direct acquisition of information as a result of usage of a device on an external body portion. For example, when measuring pH of a skin portion, information is obtained by the device used to measure the pH, and information might also be obtained by a person using that device and/or any other person or electronic device receiving any form of information transmission indicating the pH measured by the device.

**[0063]** According to a still further embodiment of the method shown in the flowchart of Fig. 1, each of the obtaining of the first information (step 20) and the obtaining of the second information (step 22) may comprise receiving information chosen from a quantitative measurement of the condition(s), one or more images of the external body portion, and one or more external body portion samples. The information may be received in person, using a postal service or a package delivery service, or using a computer network, for example.

**[0064]** In one example, information acquired from the first and second body portions of a subject may be received by a provider. In this example, the subject may acquire measurements of skin pH, for example, for the first and second body portions and then cause information about the measurements to be delivered to a provider, so that the provider obtains the information. Alternatively, a first provider may acquire an image (e.g., ultrasound image) and/or a sample of first and second body portions of the subject and then cause information relating to the images and/or samples to be delivered to a second provider, so that the second provider obtains the information.

**[0065]** It should be appreciated that the method depicted in the flowchart of Fig. 1 could have one or more additional steps preceding or following one or more of the steps 20, 22, and 24. For example, Fig. 5 shows a flowchart of an exemplary method wherein after the difference is determined in step 24, the subject is enabled to receive information (step 25). There are many different forms of information that the subject might be enabled to receive. For example, the information might be an indication of the difference determined in step 24, and/or a notification about the impact of environmental factors affecting the first external body portion, and/or information about one or more products that could be used for the first external body portion.

**[0066]** In another example, the information could be any form of information that permits the subject to determine her potential for improving her appearance by using the subject herself as a baseline, as opposed to someone else.

**[0067]** In a further example, the information may relate to a product, such as a cosmetic product and/or other product. According to this example, a product may be applied to the first and second external body portions of the subject. Where the first and second external body portions have different levels of exposure to one or more

environmental factors and/or other factors, the determining of the difference between the first information and the second information may provide information about the performance (e.g., efficacy) of the product. This information may include the performance of the product as a function of different levels of environmental exposure, for example.

**[0068]** Fig. 7, which is explained below, shows an example of a graphical illustration that might be provided to the subject as a result of step 25 of Fig. 5.

**[0069]** The flowchart in Fig. 6 shows a further exemplary embodiment of the invention. As shown, after the steps 20, 22, and 24, described above, have been performed, the subject may be given the option to receive an indication of the difference between the first information and the second information (step 26). Since this difference may correlate to the impact of one or more environmental factors on the first body portion, a viewing of the difference might provide an indication of environmental impact on the first body portion.

**[0070]** If that option is chosen, the subject may be enabled to receive an indication of the difference (step 28). In one example, the subject may visit the provider in person and the provider could explain the difference. In another example, the subject could be provided with an opportunity to view the difference in the form of some visual indication. One example of a visual indication is the graphic illustration of Fig. 7, described in more detail below.

**[0071]** Alternatively, the indication may be illustrated using images of the subject's first body portion. For example, one image may show the subject's first body portion with the measured conditions, while another image may show a simulated image of the first body portion having the conditions of the second body portion. These two images may represent, respectively, a baseline image showing existing conditions and an ideal image showing the potential benefits of the treatment. According to this example, a picture of the subject's face in substantially its current condition may be provided along with a virtual image showing the face having one or more conditions of the second body portion. These contrasted images may provide the subject with a realistic expectation of the results of a skin treatment, for example.

**[0072]** A provider may enable a subject to receive an indication of the difference between the first information and the second information by sending it to the subject. The indication may be sent using a package delivery service, such as a courier or the postal service. The indication may be a hard copy of a graphic illustration or stored information relating to the indication on a computer readable medium, such as a disk or tape, containing a digital copy of the graphic illustration.

**[0073]** The provider may also utilize a computer network to send the indication to the subject. Here, the provider may send the indication, such as a digital copy of the graphic illustration, using e-mail. Alternatively, the provider may make the indication available on a website

that the subject may access. The indication may be made available on the website in any conventional form, including graphical illustrations or numerical listings.

**[0074]** After completing step 28, or if the subject chooses not to receive an indication of the difference between the first information and the second information (step 26), the subject may be given the option to assess the impact of the environment on the first body portion over time (step 30).

**[0075]** If the subject chooses to assess the impact of the environment on the first body portion over time (step 30), further steps of the method may be performed. The first information obtained in step 20 may be representative of the one or more conditions of the first external body portion of the subject at approximately a first time. Further, the second information obtained in step 22 may be representative of one or more conditions of the second external body portion of the subject at approximately the first time. As shown in Fig. 6, the further steps may comprise obtaining third information, which is representative of the one or more conditions of the first external body portion of the subject at approximately a second time (step 32), obtaining fourth information, which is representative of the one or more conditions of the second external body portion of the subject at approximately the second time (step 34), and determining a difference between the third information and the fourth information (step 36). Here, the third information and fourth information could be initially acquired and obtained in the same way in which the first and second information were acquired and obtained, by using the same types of device (s).

**[0076]** In this example, the third information and fourth information relate to one or more conditions existing at approximately a second time occurring a period of time after the approximate first time relating to the first information and the second information. For example, the period of time could be in terms of hours, days, months, and/or years. Although the first/second information and third/fourth information may relate to one or more conditions existing at differing periods of time, this information may be obtained simultaneously, for example, by receiving a single data transmission containing each of the first, second, third, and fourth information, and/or at different times, for example, by receiving a first data transmission containing the first/second information and a second data transmission containing the third/fourth information.

**[0077]** As shown in Fig. 6, the method could further include comparing the difference between the first information and the second information with the difference between the third information and the fourth information so as to enable an analysis taking into account impact of the environmental factor(s) over at least the period of time (step 38). The subject may then be enabled to receive an indication of the impact of one or more environmental factors over time (step 40).

**[0078]** This indication may be in the form of a graphic illustration, such as that shown in Fig. 7, where the con-

dition (in some quantifiable form) is charted over time with a better condition having a greater value. In Fig. 7, the first portion line L1 represents the condition of a first body portion over time and the second portion line L2 represents the condition of a second body portion over time. For this example, the lines L1 and L2 diverge, showing that the impact of one or more environmental factors may become more pronounced over time. Time T0 represents the approximate time at which the first and second information were obtained and time T1 represents the approximate time at which the third and fourth information were obtained.

**[0079]** As shown in Fig. 7, further information about the condition of the first and second body portions could also be obtained at later times T2, T3, T4, etc. and added to the chart. Alternatively, data processing, such as extrapolation, could be used to estimate the condition at these times. The length of time of each time period T0-T1, T1-T2, etc. could be any length, but at least some examples of the method may have time periods of at least a few days, weeks, months, or years.

**[0080]** The method described with reference to Fig. 6 may be carried out with external body portions that have received a treatment, such as an application of a product. In addition (or in the alternative), the method may be practiced with untreated external body portions.

**[0081]** In another example of the method, the subject may assess the impact of the environment on the first body portion over time by obtaining third information, which is representative of one or more conditions of the first external body portion of the subject at approximately a second time and determining a difference between the third information and the second information. This difference may be compared with the difference between the first and second information so as to enable an analysis taking into account impact of the environmental factor(s) over at least the period of time. Thus, in this example, optionally no additional information representative of the condition(s) of the second external body portion is obtained.

**[0082]** Other examples of the method may have time periods of relatively short duration, such as minutes or seconds. Obtaining information at short intervals may provide kinetic (e.g., dynamic) characterization of the conditions of the external body portions. In one example, the pH of skin located on the face and skin located on the buttocks may be measured every 10 seconds for an hour or longer. This kinetic measurement of the pH may enable construction of a curve representative of the condition for each external body portion over time. The curves for each external body portion may be compared to determine the difference between one or more conditions of the portions.

**[0083]** The graphic illustration of Fig. 7 also includes a prediction line L1'. The prediction line L1' could be a representation of a prediction of the condition of the first portion if a product is used to treat the first portion after time T1. Rather than sloping away from the second por-

tion line L2, like the first portion line L1, the prediction line L1' slopes toward second portion line L2, thereby illustrating how use of a product might reduce the impact of the environmental factor(s) on the first portion. For example, when the condition is wrinkles, the prediction line L1' might provide a representation of the improvement of wrinkles in the first portion if a wrinkle reducing product is applied to the first portion. In addition to enabling the subject to receive the graphical illustration of Fig. 7, the subject might also be enabled to receive information about the product forming the basis for the prediction line L1', such as an identification of the product and also, optionally, information enabling the subject to purchase the product.

**[0084]** After completing step 40 of Fig. 6, or if the subject chooses not to assess the impact of the environment on the first body portion over time (step 30), the method of this embodiment may be complete. Alternatively, when further information is obtained at a later time, the method could continue.

**[0085]** The flowchart in Fig. 8 shows a further exemplary embodiment of the invention. As shown, after performing the steps 20, 22, and 24, the subject may be given the option to select a treatment for the first external body portion based on the difference between the first information and the second information (step 42).

**[0086]** If that option is chosen, the subject may be enabled to receive information regarding a recommended treatment of the first external body portion (step 44). The recommended treatment may comprise applying a cosmetic product and/or a care product to the first external body portion.

**[0087]** In one example, the subject may visit the provider in person and the provider may recommend the treatment during a discussion. In another example, the provider may enable a subject to receive information regarding the recommended treatment by sending it to the subject. The information may be sent using a package delivery service, such as a courier or a postal service. The information may be a hard copy or digital information relating to the treatment.

**[0088]** The provider may also utilize a computer network to send the information to the subject. For example, the provider may send the information, such as a digital copy of the information, using e-mail. Alternatively, the provider may make the information available on a website that the subject may access. The information may be made available on the website in any conventional form, including graphical illustrations having hypertext or text descriptions.

**[0089]** After completing step 44, or if the subject chooses not to receive information regarding the recommended treatment of the first external body portion (step 42), the subject is given the option to assess at least initial effectiveness of the treatment (step 46).

**[0090]** If the subject chooses to assess at least initial effectiveness of the treatment (step 46), further steps of the method may be performed. The first information ob-

tained in step 20 may be representative of the one or more conditions of the first external body portion of the subject at approximately a first time. Further, the second information obtained in step 22 may be representative of the one or more conditions of the second external body portion of the subject at approximately the first time. As shown in Fig. 8, the method may further comprise obtaining third information, which is representative of the condition(s) of the first external body portion of the subject at approximately a second time (step 48), obtaining fourth information, which is representative of the condition(s) of the second external body portion of the subject at approximately the second time (step 50), and determining a difference between the third information and the fourth information (step 52). The second time may occur at least a period of time after a treatment of the first external body portion is initiated. Thus, the third information and the fourth information of the method of Fig. 8 may relate to one or more conditions existing at least a period of time after a treatment of the first external body portion is initiated.

**[0091]** As shown in Fig. 8, the method may further comprise comparing the difference between the first information and the second information with the difference between the third information and the fourth information so as to enable a determination of at least initial effectiveness of the treatment (step 54). The subject may then be enabled to receive an indication of at least initial effectiveness of the treatment (step 56). This indication may be in the form of a graphic illustration, such as that shown in Fig. 9, wherein the first portion line L1 could represent the condition of the first portion as a result of the treatment, the second portion line L2 could represent the condition of the second portion, and the prediction line L1' could represent a prediction of the condition of the first portion if the treatment is discontinued. Alternatively, the graphic illustration could be like that of Fig. 7, wherein the prediction line L1' of Fig. 7 represents a prediction of the condition of the first portion if the treatment of the first portion is altered to include a second product differing from the product of the initial treatment and/or to include a product dosage and/or product application method differing from that initially used.

**[0092]** After completing step 56, or if the subject chooses not to assess at least initial effectiveness of the treatment (step 46), the method of Fig. 8 may be complete. Optionally, certain additional method steps, such as further information obtaining, might be performed in the process before completing it.

**[0093]** Optionally, any of the methods described herein may comprise recommending a product based on the difference between the first information and the second information, and may also comprise determining at least the initial effectiveness of the product after it is applied to the first portion.

**[0094]** Any of the disclosed methods may also further comprise enabling the subject to receive information regarding at least one product capable of reducing the im-

part of the at least one environmental factor. The product information may be communicated to the subject using at least one of a package delivery service and a computer network. Further, the product may be offered for sale to the subject and/or the subject may be provided with information, in any manner described above, for example, to enable the subject to purchase the product.

**[0095]** Information representative of multiple conditions of the external body portions may be collected using one or more of the above-described methods. This information may then be correlated to provide a more detailed assessment of the first external body portion and how it compares with the second external body portion. The information may be further correlated with the sensory observations of the subject to aid in the assessment of the effectiveness of the treatment.

**[0096]** The flowchart in Fig. 10 shows a further exemplary method. The method may comprise obtaining first information, which is representative of one or more conditions of a first external body portion of a subject at approximately a first time (step 58), obtaining second information, which is representative of one or more conditions of a second external body portion of the subject at approximately the first time (step 60), and determining a difference between the first information and the second information (step 62), which could be performed as discussed above in association with Fig. 1.

**[0097]** The method of Fig. 10 may further comprise obtaining third information, which is representative of the one or more conditions of the first external body portion at approximately a second time (step 64), obtaining fourth information, which is representative of the one or more conditions of the second external body portion at approximately the second time (step 66), determining a difference between the third information and the fourth information (step 68), and comparing the difference between the first information and the second information with the difference between the third information and the fourth information (step 70). The second time may occur at least a period of time after a treatment of the first external body portion is initiated. Thus, for the method shown in Fig. 8, the third and fourth information may relate to one or more conditions existing at least a period of time after a treatment of the first external body portion is initiated.

**[0098]** The treatment could be initiated either approximately at the first time, before the first time, or after it. In one possible example, the obtaining of the third information (step 64) and the obtaining of the fourth information (step 66) may occur at least a period of time after the treatment of the first external body portion is initiated. The subject may then be enabled to receive an indication of at least initial effectiveness of the treatment (step 72), as described above in association with Fig. 8.

**[0099]** The one or more initial conditions of the first external body portion may be substantially absent from the second external body portion. The one or more conditions may include acne, and/or atopic dermatitis. The treatment may comprise administering at least one cos-

metic compound to the first external body portion.

**[0100]** Any of the methods described herein may further comprise maintaining a database containing external body portion information for a plurality of subjects and conducting an analysis based on a comparison between information in the database and at least one of the first information, the second information, and the determined difference. At least one of the first information, the second information, and the determined difference may be stored in the database.

**[0101]** Optionally, any of the methods might also include maintaining a subject record and causing storage in the subject record of at least one of the first information, the second information, and the determined difference. Information acquired subsequent to the first information and the second information could be stored in this subject record. The subject may also be enabled to access at least a portion of information stored in the subject record via at least one of a package delivery service and a computer network, as described above.

**[0102]** In some examples, the method may provide the ability to compare two differing external body portions at differing times (e.g., T<sub>0</sub>, T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, etc.), either with or without a treatment (e.g., a cosmetic treatment, such as a cosmetic product application) being applied to the first external body portion.

**[0103]** Some examples of the method may allow for potential correlation of multiple differing parameters (e.g., bioanalytical, bioinstrumental, clinical, and/or sensorial parameters) at differing times (e.g., T<sub>0</sub>, T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, etc.) either with or without a treatment being applied to the first external body portion. For example, multiple tests (e.g., a pH test and a sensorial touch test) could be made on each portion and the data could be used to determine a correlation.

**[0104]** Some examples of the method might enable an analysis of the kinetic evolution of one or more parameters (e.g., bioinstrumental and/or bioanalytical) of the external body portions either with or without a treatment being applied to the first portion.

**[0105]** An exemplary block diagram of a computer system 74 suitable for performing at least portions of the methods of the present invention is shown in Fig. 11. As shown, there are a plurality of client computers 76, 78 that may be used to initially acquire information relating to the first and second external body portions of the subject, and a provider computer 80 that may obtain the information and determine the difference. This computer system 74 may comprise a different number of computers than are shown. The client computers 76, 78 may interface with the provider computer 80 via a network 82.

**[0106]** Each client computer 76, 78 may be capable of communicating with other computers. The client computers 76, 78 may be used to perform various tasks. Each client computer 76, 78 may include a browser, such as Internet Explorer or Netscape Navigator to assist the user in performing these tasks. In the example illustrated in Fig. 11, one client computer ("Client Computer #1") is

configured for use by the subject and another client computer ("Client Computer #2") is configured for use by a first provider, who might be an entity that initially acquires information about the first and second external body portions. Different numbers of each type of computer may be used to perform one or more parts of the method or the entire method.

**[0107]** The provider computer 80 may be a Sun Enterprise 4500 server or any other processor capable of communicating with other computers.

**[0108]** The network 82 may include a Local Area Network (LAN) or a Wide Area Network (WAN). In addition, the network 82 may also include a combination of public (e.g., Internet) and private networks.

**[0109]** Other system and network configurations will be apparent to those skilled in the art and are also within the scope of the present invention. For example, the system 74 as shown in Fig. 11 may include more than one provider computer 80 to provide load balancing and fail-over capabilities. In a further example, the system may lack one of the client computers 76, 78. Moreover, it will be apparent to one skilled in the art that the components shown in Fig. 11 may use various protocols, such as Hypertext Transport Protocol (HTTP) and Transmission Control Protocol/Internet Protocol (TCP/IP) to communicate with each other.

**[0110]** Fig. 12 is an exemplary block diagram of the client computer 76, 78. The client computer 76, 78 may comprise a processor 84, which connects via a bus 86 to a memory 88, a secondary storage 90, a network interface 92, an input/output interface 94, and an image recording device 96. The image recording device 96 may comprise an image scanner, a digital video camera, a digital camera, and/or other conventional device.

**[0111]** The client computer 76, 78 may be configured to operate with any known operating system, including, for example, the Solaris operating system available from Sun Microsystems, Inc., the Linux operating system, or a Windows operating system (e.g., Windows NT).

**[0112]** The client computer may be associated with a secondary storage 90 permitting use of a computer readable medium, such as a disk or a tape. Software and/or data may be loaded into memory from the computer readable medium.

**[0113]** The network interface 92 may transmit messages from the client computer 76, 78 to other computers, such as other client computers and/or the provider computer 80, and may receive messages addressed to the client computer 76, 78 from other computers, for example, via the network 82. The input/output interface 94 may include, for example, a keyboard or a key pad and a display unit.

**[0114]** Fig. 13 is an exemplary block diagram of the provider computer 80. The provider computer 80 may comprise a processor 98, which connects via a bus 100 to a memory 102, a secondary storage 104 permitting use of a computer readable medium, a network interface 106, and an input/output interface 108.

**[0115]** The provider computer 80 may operate with any known operating system. The operating system may include, for example, the Solaris operating system, the Linux operating system, or a Windows operating system (e.g., Windows NT).

**[0116]** The memory 102 may include a database 110. The database 110 may contain external body portion information for a plurality of subjects, as described above. A variety of analyses may be performed by comparing information in the database 110 with the first information, the second information, and the determined difference. The database 110 may also contain one or more subject records, as described above.

**[0117]** The memory 102 may also include a relational database management system, such as Oracle 8i version 8.1.6 available from Oracle Corporation or Ingres, available from Computer Associates International, Inc.

**[0118]** The network interface 106 may transmit messages from the provider computer 80 to other computers, such as client computers, and receive messages addressed to the provider computer 80 from other computers, for example, via networks. The input/output interface 106 may include, for example, a keyboard or a key pad and a display unit.

**[0119]** The term "cosmetic product" refers to a product as defined in the Council Directive 93/35/EEC of 14 June 1993. The term "cosmetic product" encompass care products such as anti-wrinkle and hydration care products, for example.

**[0120]** A "cosmetic treatment" is a treatment with at least one cosmetic product.

**[0121]** All medical or therapeutical methods for treatment of the human or animal body and diagnostic methods practised on the human or animal body contrary to article 52(4) EPC depart from the scope of the present application.

**[0122]** Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only.

## Claims

1. A method of enabling an analysis taking into account exposure of at least one external body portion to the environment, the method comprising:

obtaining first information representative of at least one condition of a first external body portion of a subject;  
 obtaining second information representative of at least one condition of a second external body portion of the subject, wherein the second external body portion is different from the first portion and less exposed to at least one environmental factor than the first external body portion;

and  
 determining a difference between the first information and the second information so as to enable an analysis taking into account impact of the at least one environmental factor, **characterized in that**  
 the first external body portion comprises skin located on the face of the subject, and the second external body portion comprises one of skin located on the buttocks of the subject and skin located on an inner surface of an upper part of at least one of the subject's arms.

- 2. Method according to the preceding claim, wherein the at least one condition comprises at least one of texture, elasticity, dryness, cellulitis, sweating, aging, wrinkles, exfoliation, desquamation, homogeneity of color, micro-circulation, shininess, softness, smoothness, hydration, sebum production, cleanliness, irritation, redness, vasomotion, vasodilation, vasoconstriction, pigmentation, and freckles.
- 3. Method according to any one of the preceding claims, further comprising enabling the subject to receive an indication of the difference between the first information and the second information.
- 4. Method according to the preceding claim, further comprising sending the indication to the subject via at least one of a package delivery service and a computer network.
- 5. Method according to any one of the two preceding claims, wherein the indication comprises a graphic illustration.
- 6. Method according to any one of the preceding claims, further comprising applying a cosmetic non-medical and non-therapeutical product to the first external body portion of the subject.
- 7. Method according to the preceding claim, further comprising applying the cosmetic product to the second external body portion of the subject.
- 8. Method according to any one of the preceding claims, wherein the first external body portion has had a cosmetic, non-medical and non-therapeutical product applied thereto, and wherein the determining of the difference between the first information and the second information provides information about the product.
- 9. Method according to any one of the preceding claims, wherein the first external body portion and the second external body portion have had a cosmetic, non-medical and non-therapeutical product applied thereto, and wherein the determining of the

5 difference between the first information and the second information provides information about the cosmetic product.

10. Method according to any one of the preceding claims, wherein the first information is representative of the at least one condition of the first external body portion of the subject at approximately a first time, and wherein the second information is representative of the at least one condition of the second external body portion of the subject at approximately the first time, the method further comprising:

15 obtaining third information, wherein the third information is representative of the at least one condition of the first external body portion of the subject at approximately a second time, wherein the second time occurs at least a period of time after the first time; and

20 determining a difference between the third information and the second information.

11. Method according to the preceding claim, further comprising comparing the difference between the first information and the second information with the difference between the third information and the second information so as to enable an analysis taking into account impact of the at least one environmental factor over at least the period of time.

12. Method according to the preceding claim, further comprising enabling the subject to receive an indication of the impact of the at least one environmental factor over at least the period of time.

13. Method according to any one of claims 1 to 9, wherein the first information is representative of the at least one condition of the first external body portion of the subject at approximately a first time, and wherein the second information is representative of the at least one condition of the second external body portion of the subject at approximately the first time, the method further comprising:

45 obtaining third information, wherein the third information is representative of the at least one condition of the first external body portion of the subject at approximately a second time;

50 obtaining fourth information, wherein the fourth information is representative of the at least one condition of the second external body portion of the subject at approximately the second time, wherein the second time occurs at least a period of time after the first time; and

55 determining a difference between the third information and the fourth information.

14. Method according to the preceding claim, further

- comprising comparing the difference between the first information and the second information with the difference between the third information and the fourth information so as to enable an analysis taking into account impact of the at least one environmental factor over at least the period of time.
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15. Method according to the preceding claim, further comprising enabling the subject to receive an indication of the impact of the at least one environmental factor over at least the period of time.
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16. method according to any one of the preceding claims, further comprising selecting a cosmetic, non-medical and non-therapeutical treatment for the first external body portion based on the difference between the first information and the second information.
- 15
17. Method according to any one of claims 1 to 9, further comprising:
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- obtaining third information, wherein the third information is representative of the at least one condition of the first external body portion at least a period of time after a cosmetic non-medical and non-therapeutical treatment of the first external body portion is initiated; and determining a difference between the third information and the second information.
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18. Method according to the preceding claim, further comprising enabling the subject to receive an indication of at least one of the difference between the first information and the second information and the difference between the third information and the second information.
- 35
19. Method according to any one of the two preceding claims, further comprising comparing the difference between the first information and the second information with the difference between the third information and the second information so as to enable a determination of at least initial effectiveness of the cosmetic treatment.
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20. Method according to the preceding claim, further comprising enabling the subject to receive an indication of the at least initial effectiveness of the cosmetic treatment.
- 45
- 50
21. method according to any one of claims 1 to 9, wherein the first information is representative of the at least one condition of the first external body portion of the subject at approximately a first time, and wherein the second information is representative of the at least one condition of the second external body portion of the subject at approximately the first time, the method further comprising:
- 55
- obtaining third information, wherein the third information is representative of the at least one condition of the first external body portion of the subject at approximately a second time; obtaining fourth information, wherein the fourth information is representative of the at least one condition of the second external body portion of the subject at approximately the second time, wherein the second time occurs at least a period of time after a cosmetic non-medical and non-therapeutic treatment of the first external body portion is initiated; and determining a difference between the third information and the fourth information.
22. Method according to the preceding claim, further comprising enabling the subject to receive an indication of at least one of the difference between the first information and the second information and the difference between the third information and the fourth information.
23. Method according to the preceding claim, further comprising comparing the difference between the first information and the second information with the difference between the third information and the fourth information so as to enable a determination of at least initial effectiveness of the cosmetic treatment.
24. Method according to the preceding claim, further comprising enabling the subject to receive an indication of the at least initial effectiveness of the cosmetic treatment.
25. Method according to claims 21 to 24, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information comprises acquiring a quantitative measurement of at least one condition.
26. Method according to the preceding claim, wherein the quantitative measurement is chosen from corneometry, dermal torque measurement, pH measurement, colorimetry, sebumetry, lipometry, confocal measurement, epidermal turnover measurement, skin layer thickness measurement, blood microcirculation measurement, desquamation rate measurement, water loss measurement, skin hydration measurement, scoring with a densiscore-type tool, and measurement of sudatory function.
27. Method according to any one of the two preceding claims, wherein each of the determining of the difference between the first information and the second

- information and the determining of the difference between the third information and the fourth information comprises determining at least one difference between quantitative measurements.
28. Method according to any one of claims 21 to 27, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information comprises acquiring at least one image of a respective external body portion of the subject.
29. Method according to the preceding claim, wherein the at least one image is chosen from photographs, scanned images, ultrasonic images, magnified images, wrinkle projections, and imprints.
30. Method according to any one of the two preceding claims, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information further comprises analyzing the at least one image to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition.
31. Method according to the preceding claim, wherein the analyzing of the at least one image comprises at least one of counting sebaceous glands, counting sweat glands, and visualizing imprints in the at least one image.
32. Method according to any one of the two preceding claims, wherein each of the determining of the difference between the first information and the second information and the determining of the difference between the third information and the fourth information comprises determining at least one difference between properties ascertained from analyzing the images.
33. Method according to any one of claims 21 to 32, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information comprises acquiring at least one external body portion sample.
34. Method according to the preceding claim, wherein the at least one sample is chosen from skin cells, secretions, bioanalytical content, bacteriological content, and enzymatic content.
35. Method according to any one of the two preceding claims, wherein the acquiring of the at least one sample is carried out using a technique chosen from adhesive collection, absorption, and abrasion.
36. Method according to any one of claims 33 to 35, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information further comprises analyzing the at least one sample to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition.
37. Method according to the preceding claim, wherein the qualitative property relates to one of presence and absence of at least one component, and the quantitative property relates to relative quantity of at least one component in the sample.
38. Method according to any one of the two preceding claims, wherein the analyzing of the at least one sample is carried out using at least one of an optical, chemical, and biological analysis technique.
39. Method according to the preceding claim, wherein the analysis technique is chosen from gas chromatography/mass spectrometry, gas chromatography/mass spectrometry/mass spectrometry, liquid chromatography/mass spectrometry, liquid chromatography/mass spectrometry/mass spectrometry, ultraviolet observation, fluorescence observation, infrared observation, Raman spectrophotometric observation, and X-ray observation.
40. Method according to any one of claims 36 to 39, wherein each of the determining of the difference between the first information and the second information and the determining of the difference between the third information and the fourth information comprises determining at least one difference between properties ascertained from analyzing the samples.
41. Method according to any one of claims 21 to 40, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information comprises receiving information chosen from a quantitative measurement of the at least one condition, at least one external body portion image, and at least one external body portion sample.
42. Method according to the preceding claim, wherein each of the obtaining of the first information, the obtaining of the second information, the obtaining of the third information, and the obtaining of the fourth information further comprises at least one of analyzing the at least one image to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition and analyzing the at least one sample to ascertain at least one of a qualitative property and a quantitative property re-

lating to the at least one condition.

**43.** Method according to any one of the two preceding claims, wherein the information is received via at least one of a package delivery service and a computer network.

**44.** Method according to any one of claims 21 to 43, further comprising:

maintaining a database containing external body portion information for a plurality of subjects; and

conducting an analysis based on a comparison between information in the database and at least one of the first information, the second information, the determined difference between the first information and the second information, the third information, the fourth information, and the difference between the third information and the fourth information.

**45.** Method according to the preceding claim, further comprising storing at least one of the first information, the second information, the determined difference between the first information and the second information, the third information, the fourth information, and the difference between the third information and the fourth information in the database.

**46.** Method according to any one of claims 21 to 45, further comprising:

maintaining a subject record; and causing storage in the subject record of at least one of the first information, the second information, the determined difference between the first information and the second information, the third information, the fourth information, and the difference between the third information and the fourth information.

**47.** Method according to the preceding claim, comprising causing storage in the subject record of subject information acquired subsequent to the third information and the fourth information.

**48.** Method according to any one of claims 16 to 47, wherein the cosmetic treatment comprises applying a cosmetic non-medical, non-therapeutical product to the first external body portion.

**49.** Method according to any one of claims 16 to 48, further comprising enabling the subject to receive information regarding the treatment for the first external body portion.

**50.** Method according to any one of claims 16 to 49, fur-

ther comprising determining a subsequent cosmetic non-medical and non-therapeutic treatment for the first external body portion, wherein the determining of the subsequent cosmetic treatment is based on the comparison between the differences.

**51.** Method according to the preceding claim, further comprising enabling the subject to receive information regarding at least the subsequent cosmetic treatment.

**52.** Method according to any one of the preceding claims, further comprising recommending at least one product based on the difference between the first information and the second information.

**53.** Method according to the preceding claim, further comprising enabling the subject to receive information regarding the at least one product.

**54.** Method according to the preceding claim, wherein the product information is communicated to the subject using at least one of a package delivery service and a computer network.

**55.** Method according to any one of the preceding claims, wherein the at least one environmental factor is chosen from ultraviolet radiation, extreme temperature, wind, pollution, and shaving.

**56.** Method according to any one of the preceding claims, further comprising enabling the subject to receive a notification about an impact of the at least one environmental factor.

**57.** Method according to any one of the preceding claims, wherein the at least one condition represented by the first information is substantially absent from the second external body portion.

**58.** Method according to the preceding claim, wherein the at least one condition represented by the first information comprises at least one of acne and atopic dermatitis.

**59.** Method according to any one of the preceding claims, wherein each of the obtaining of the first information and the obtaining of the second information comprises acquiring a quantitative measurement of the at least one condition.

**60.** Method according to the preceding claim, wherein the quantitative measurement is chosen from corneometry, dermal torque measurement, pH measurement, colorimetry, sebumetry, lipometry, confocal measurement, epidermal turnover measurement, skin layer thickness measurement, blood microcirculation measurement, desquamation rate

measurement, water loss measurement, skin hydration measurement, scoring with a densiscore-type tool, and measurement of sudatory function.

- 61.** Method according to any one of the two preceding claims, wherein the determining of the difference between the first information and the second information comprises determining at least one difference between the quantitative measurement of the at least one condition of the first external body portion and the quantitative measurement of the at least one condition of the second external body portion. 5
- 62.** Method according to any one of the preceding claims, wherein each of the obtaining of the first information and the obtaining of the second information comprises acquiring at least one image of a respective external body portion of the subject. 10
- 63.** Method according to the preceding claim, wherein the at least one image is chosen from photographs, scanned images, ultrasonic images, magnified images, wrinkle projections, and imprints. 20
- 64.** Method according to any one of the two preceding claims, wherein each of the obtaining of the first information and the obtaining of the second information further comprises analyzing the at least one image to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition. 25
- 65.** Method according to the preceding claim, wherein the analyzing of the at least one image comprises at least one of counting sebaceous glands, counting sweat glands, and visualizing imprints in the at least one image. 30
- 66.** Method according to any one to the two preceding claims, wherein the determining of the difference between the first information and the second information comprises determining at least one difference between at least one property ascertained from analyzing at least one image of the first external body portion and at least one property ascertained from analyzing at least one image of the second external body portion. 35
- 67.** Method according to any one of the preceding claims, wherein each of the obtaining of the first information and the obtaining of the second information comprises acquiring at least one external body portion sample. 40
- 68.** Method according to the preceding claim, wherein the at least one sample is chosen from skin cells, secretions, bioanalytical content, bacteriological content, and enzymatic content. 45
- 69.** Method according to any one of the two preceding claims, wherein the acquiring of the at least one sample is carried out using a technique chosen from adhesive collection, absorption, and abrasion. 50
- 70.** Method according to any one of claims 67 to 69, wherein each of the obtaining of the first information and the obtaining of the second information further comprises analyzing the at least one sample to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition. 55
- 71.** Method according to the preceding claim, wherein the qualitative property relates to one of presence and absence of at least one component, and the quantitative property relates to relative quantity of at least one component in the sample.
- 72.** Method according to any one of the two preceding claims, wherein the analyzing of the at least one sample is carried out using at least one of an optical, chemical, and biological analysis technique.
- 73.** Method according to the preceding claim, wherein the analysis technique is chosen from gas chromatography/mass spectrometry, gas chromatography/mass spectrometry/mass spectrometry, liquid chromatography/mass spectrometry, liquid chromatography/mass spectrometry/mass spectrometry, ultraviolet observation, fluorescence observation, infrared observation, Raman spectrophotometric observation, and X-ray observation.
- 74.** Method according to any one of claims 70 to 73, wherein the determining of the difference between the first information and the second information comprises determining at least one difference between at least one property ascertained from analyzing at least one sample of the first body portion and at least one property ascertained from analyzing at least one sample of the second body portion.
- 75.** Method according to any one of the preceding claims, wherein each of the obtaining of the first information and the obtaining of the second information comprises receiving information chosen from a quantitative measurement of the at least one condition, at least one image of a respective external body portion of the subject, and at least one external body portion sample.
- 76.** Method to the preceding claim, wherein each of the obtaining of the first information and the obtaining of the second information further comprises at least one of analyzing the at least one image to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition and

analyzing the at least one sample to ascertain at least one of a qualitative property and a quantitative property relating to the at least one condition.

77. Method according to any one of the two preceding claims, wherein the information is received via at least one of a package delivery service and a computer network.

78. Method according to any one of the preceding claims, further comprising:

maintaining a database containing external body portion information for a plurality of subjects; and  
conducting an analysis based on a comparison between information in the database and at least one of the first information, the second information, and the determined difference.

79. Method according to the preceding claim, further comprising storing at least one of the first information, the second information, and the determined difference in the database.

80. Method according to any one of the preceding claims, further comprising:

maintaining a subject record; and  
causing storage in the subject record of at least one of the first information, the second information, and the determined difference.

81. Method according to the preceding claim, further comprising causing storage in the subject record of subject information acquired subsequent to the first information and the second information.

82. Method according to any one of the two preceding claims, further comprising enabling the subject to access at least a portion of information stored in the subject record.

83. Method according to the preceding claim, further comprising enabling the subject to access the information via at least one of a package delivery service and a computer network.

84. Method according to any one of the two preceding claims, further comprising enabling the subject to graphically display the information.

85. A method according to any one of the preceding claims, wherein the second external body portion is less exposed to at least one environmental factor than the first external body portion during the life of the subject.

86. A method according to any one of the preceding claims, wherein the second external body portion is normally covered with clothing and/or exposure to the environment is blocked by another portion of the body and/or is an area that is not normally shaved.

#### Patentansprüche

1. Verfahren zum Ermöglichen einer Analyse, die berücksichtigt, dass wenigstens ein äußerer Körperabschnitt der Umgebung ausgesetzt ist, wobei das Verfahren umfasst:

Erhalten erster Informationen, die wenigstens einen Zustand eines ersten äußeren Körperabschnitts einer Person repräsentieren;

Erhalten zweiter Informationen, die wenigstens einen Zustand eines zweiten äußeren Körperabschnitts der Person repräsentieren, wobei der zweite äußere Körperabschnitt von dem ersten Teil verschieden ist und zumindest einem Umgebungsfaktor weniger stark ausgesetzt ist als der erste äußere Körperabschnitt; und

Bestimmen einer Differenz zwischen den ersten Informationen und den zweiten Informationen, um so eine Analyse zu ermöglichen, die die Einwirkung des wenigstens einen Umgebungsfaktors berücksichtigt, **dadurch gekennzeichnet, dass**

der erste äußere Körperabschnitt Haut, die sich im Gesicht der Person befindet, umfasst und der zweite äußere Körperabschnitt Haut, die sich am Gesäß der Person befindet, oder Haut, die sich an einer inneren Oberfläche eines oberen Teils wenigstens eines der Arme der Person befindet, umfasst.

2. Verfahren nach dem vorhergehenden Anspruch, wobei der wenigstens eine Zustand wenigstens einen der folgenden Zustände umfasst: Textur, Elastizität, Trockenheit, Callulitis, Schwitzen, Alterung, Falten, Abblätterung, Abschuppung, Farbhomogenität, Mikrozirkulation, Glanz, Weichheit, Glattheit, Hydratation, Talgproduktion, Reinheit, Irritation, Rötung, Vasomation, Vasodilatation, Vasokonstriktion, Pigmentierung und Sommersprossen.

3. Verfahren nach einem der vorhergehenden Ansprüche, bei dem ferner der Person ermöglicht wird, eine Angabe der Differenz zwischen den ersten Informationen und den zweiten Informationen zu empfangen.

4. Verfahren nach dem vorhergehenden Anspruch, das ferner das Senden der Angabe zu der Person über einen Pakettiefdienst und/oder ein Computernetz umfasst.

5. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei die Angabe eine graphische Darstellung umfasst.
6. Verfahren nach einem der vorhergehenden Ansprüche, das ferner das Anwenden eines nicht medizinischen und nicht therapeutischen kosmetischen Produkts auf den ersten äußeren Körperabschnitt der Person umfasst.
7. Verfahren nach dem vorhergehenden Anspruch, das ferner das Anwenden des kosmetischen Produkts auf den zweiten äußeren Körperabschnitt der Person umfasst.
8. Verfahren nach einem der vorhergehenden Ansprüche, wobei auf den ersten äußeren Körperabschnitt ein kosmetisches, nicht medizinisches und nicht therapeutisches Produkt angewendet worden war und wobei das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen Informationen über das Produkt liefert.
9. Verfahren nach einem der vorhergehenden Ansprüche, wobei auf den ersten äußeren Körperabschnitt und auf den zweiten äußeren Körperabschnitt ein kosmetisches, nicht medizinisches und nicht therapeutisches Produkt angewendet worden ist und wobei das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen Informationen über das kosmetische Produkt liefert.
10. Verfahren nach einem der vorhergehenden Ansprüche, wobei die ersten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem ersten Zeitpunkt repräsentieren und wobei die zweiten Informationen den wenigstens einen Zustand des zweiten äußeren Körperabschnitts der Person ungefähr zu dem ersten Zeitpunkt repräsentieren, wobei das Verfahren ferner umfasst:
- Erhalten dritter Informationen, wobei die dritten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem zweiten Zeitpunkt repräsentieren, wobei der zweite Zeitpunkt wenigstens eine Zeitdauer nach dem ersten Zeitpunkt liegt; und
- Bestimmen einer Differenz zwischen den dritten Informationen und den zweiten Informationen.
11. Verfahren nach dem vorhergehenden Anspruch, das ferner das Vergleichen der Differenz zwischen den ersten Informationen und den zweiten Informationen mit der Differenz zwischen den dritten Informationen und den zweiten Informationen umfasst, um so eine Analyse zu ermöglichen, die die Einwirkung des wenigstens einen Umgebungsfaktors wenigstens über die Zeitdauer hinweg berücksichtigt.
12. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe der Einwirkung des wenigstens einen Umgebungsfaktors wenigstens über die Zeitdauer hinweg zu empfangen.
13. Verfahren nach einem der Ansprüche 1 bis 9, wobei die ersten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem ersten Zeitpunkt repräsentieren und wobei die zweiten Informationen den wenigstens einen Zustand des zweiten äußeren Körperabschnitts der Person ungefähr zu dem ersten Zeitpunkt repräsentieren, wobei das Verfahren ferner umfasst:
- Erhalten dritter Informationen, wobei die dritten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem zweiten Zeitpunkt repräsentieren;
- Erhalten vierter Informationen, wobei die vierten Informationen den wenigstens einen Zustand des zweiten äußeren Körperabschnitts der Person ungefähr zu dem zweiten Zeitpunkt repräsentieren, wobei der zweite Zeitpunkt wenigstens eine Zeitdauer nach dem ersten Zeitpunkt liegt; und
- Bestimmen einer Differenz zwischen den dritten Informationen und den vierten Informationen.
14. Verfahren nach dem vorhergehenden Anspruch, das ferner das Vergleichen der Differenz zwischen den ersten Informationen und den zweiten Informationen mit der Differenz zwischen den dritten Informationen und den vierten Informationen umfasst, um so eine Analyse zu ermöglichen, die die Einwirkung des wenigstens einen Umgebungsfaktors wenigstens über die Zeitdauer hinweg berücksichtigt.
15. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe der Einwirkung des wenigstens einen Umgebungsfaktors wenigstens über die Zeitdauer hinweg zu empfangen.
16. Verfahren nach einem der vorhergehenden Ansprüche, das ferner das Auswählen einer kosmetischen, nicht medizinischen und nicht therapeutischen Behandlung für den ersten äußeren Körperabschnitt anhand der Differenz zwischen den ersten Informationen und den zweiten Informationen umfasst.
17. Verfahren nach einem der Ansprüche 1 bis 9, das ferner umfasst:

- Erhalten dritter Informationen, wobei die dritten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts wenigstens nach einer Zeitdauer seit dem Beginn der kosmetischen, nicht medizinischen und nicht therapeutischen Behandlung des ersten äußeren Körperabschnitts repräsentieren; und Bestimmen einer Differenz zwischen den dritten Informationen und den zweiten Informationen.
18. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe der Differenz zwischen den ersten Informationen und den zweiten Informationen und/oder der Differenz zwischen den dritten Informationen und den zweiten Informationen zu empfangen.
19. Verfahren nach einem der zwei vorhergehenden Ansprüche, das ferner das Vergleichen der Differenz zwischen den ersten Informationen und den zweiten Informationen mit der Differenz zwischen den dritten Informationen und den zweiten Informationen umfasst, um so eine Bestimmung zumindest der anfänglichen Wirksamkeit der kosmetischen Behandlung zu ermöglichen.
20. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe zumindest der anfänglichen Wirksamkeit der kosmetischen Behandlung zu empfangen.
21. Verfahren nach einem der Ansprüche 1 bis 9, wobei die ersten Informationen wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem ersten Zeitpunkt repräsentieren und wobei die zweiten Informationen den wenigstens einen Zustand des zweiten äußeren Körperabschnitts der Person ungefähr zu dem ersten Zeitpunkt repräsentieren, wobei das Verfahren ferner umfasst:
- Erhalten dritter Informationen, wobei die dritten Informationen den wenigstens einen Zustand des ersten äußeren Körperabschnitts der Person ungefähr zu einem zweiten Zeitpunkt repräsentieren;
- Erhalten vierter Informationen, wobei die vierten Informationen den wenigstens einen Zustand des zweiten äußeren Körperabschnitts der Person ungefähr zu dem zweiten Zeitpunkt repräsentieren, wobei der zweite Zeitpunkt wenigstens nach einer Zeitdauer seit dem Beginn einer kosmetischen, nicht medizinischen und nicht therapeutischen Behandlung des ersten äußeren Körperabschnitts liegt; und Bestimmen einer Differenz zwischen den dritten Informationen und den vierten Informationen.
22. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe der Differenz zwischen den ersten Informationen und den zweiten Informationen und/oder der Differenz zwischen den dritten Informationen und den vierten Informationen zu empfangen.
23. Verfahren nach dem vorhergehenden Anspruch, das ferner das Vergleichen der Differenz zwischen den ersten Informationen und den zweiten Informationen mit der Differenz zwischen den dritten Informationen und den vierten Informationen umfasst, um so eine Bestimmung zumindest der anfänglichen Wirksamkeit der kosmetischen Behandlung zu ermöglichen.
24. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, eine Angabe wenigstens der anfänglichen Wirksamkeit der kosmetischen Behandlung zu empfangen.
25. Verfahren nach den Ansprüchen 21 bis 24, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen das Erhalten einer quantitativen Messung wenigstens eines Zustandes umfasst.
26. Verfahren nach dem vorhergehenden Anspruch, wobei die quantitative Messung gewählt wird aus der Comeometrie, der Dermal-Torque-Messung, der pH-Messung, der Colorimetrie, der Sebumetrie, der Lipometrie, der Konfokalmessung, der Messung der epidermischen Umwandlung, der Hautschichtdickenmessung, der Blutmtkroairkulationsmessung, der Abschuppungsratenmessung, der Wasserverlustmessung, der Hauthydratationsmessung, der Bewertung mit einem Werkzeug des Densiscor-Typs und der Messung der Schwitzfunktion.
27. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei sowohl die Bestimmung der Differenz zwischen den ersten Informationen und den zweiten Informationen als auch die Bestimmung der Differenz zwischen den dritten Informationen und den vierten Informationen das Bestimmen wenigstens einer Differenz zwischen quantitativen Messungen umfasst.
28. Verfahren nach einem der Ansprüche 21 bis 27, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen das Ermitteln wenigstens eines Bildes eines entsprechenden äußeren Körperabschnitts der Person umfasst.
29. Verfahren nach dem vorhergehenden Anspruch,

- wobei das wenigstens eine Bild ausgewählt wird aus Photographien, gescannten Bildern, Ultraschallbildern, vergrößerten Bildern, Faltenprojektionen und Abdrucken.
30. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen ferner das Analysieren des wenigstens einen Bildes umfasst, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustands festzusteilen.
31. Verfahren nach dem vorhergehenden Anspruch, wobei das Analysieren des wenigstens einen Bildes das Zählen von Talgdrüsen, das Zählen von Schweißdrüsen und das Visualisieren von Abdrücken in dem wenigstens einen Bild umfasst.
32. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei sowohl das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen als auch das Bestimmen der Differenz zwischen den dritten Informationen und den vierten Informationen das Bestimmen wenigstens einer Differenz zwischen Eigenschaften, die durch Analysieren der Bilder festgestellt werden, umfasst.
33. Verfahren nach einem der Ansprüche 21 bis 32, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen das Erhalten wenigstens einer Probe des äußeren Körperabschnitts umfasst.
34. Verfahren nach dem vorhergehenden Anspruch, wobei die wenigstens eine Probe gewählt wird aus Hautzellen, Sekretionen, bioanalytischem Inhalt, bakteriologischem Inhalt und enzymatischem Inhalt.
35. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Erlangen der wenigstens einen Probe unter Verwendung einer Technik ausgeführt wird, die aus Klebesammeln, Absorption und Abrieb gewählt ist.
36. Verfahren nach einem der Ansprüche 33 bis 35, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen ferner das Analysieren der wenigstens einen Probe umfasst, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustands zu ermitteln.
37. Verfahren nach dem vorhergehenden Anspruch, wobei sich die qualitative Eigenschaft auf das Vorhandensein oder Fehlen wenigstens einer Komponente bezieht und wobei sich die quantitative Eigenschaft auf die relative Menge wenigstens einer Komponente in der Probe bezieht.
38. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Analysieren der wenigstens einen Probe ausgeführt wird unter Verwendung einer optischen und/oder einer chemischen und/oder einer biologischen Analysetechnik.
39. Verfahren nach dem vorhergehenden Anspruch, wobei die Analysetechnik ausgewählt wird aus der Gaschromatographie/Massenspektrometrie, der Gaschromatographie/ Massenspektrometrie/ Massenspektrometrie, der Flüssigkeitschromatographie/Massenspektrometrie, der Flüssigkeitschromatographie/ Massenspektrometrie/ Massenspektrometrie, der Ultraviolettbeobachtung, der Fluoreszenzbeobachtung, der Infrarotbeobachtung, der Raman-spektrophotometrischen Beobachtung und der Röntgenstrahlbeobachtung.
40. Verfahren nach einem der Ansprüche 36 bis 39, wobei sowohl das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen als auch das Bestimmen der Differenz zwischen den dritten Informationen und den vierten Informationen das Bestimmen wenigstens einer Differenz zwischen Eigenschaften, die aus dem Analysieren der Proben ermittelt werden, umfasst.
41. Verfahren nach einem der Ansprüche 21 bis 40, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen das Empfangen von Informationen umfasst, die aus einer quantitativen Messung des wenigstens einen Zustandes, wenigstens eines Bildes eines äußeren Körperabschnitts und wenigstens einer Probe eines äußeren Körperabschnitts gewählt sind.
42. Verfahren nach dem vorhergehenden Anspruch, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen als auch das Erhalten der dritten Informationen als auch das Erhalten der vierten Informationen ferner das Analysieren des wenigstens einen Bildes, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustands zu ermitteln, und/oder das Analysieren der wenigstens einen Probe, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustands zu ermitteln, umfasst.

43. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei die Informationen über einen Paketlieferdienst und/oder ein Computernetz empfangen werden.
44. Verfahren nach einem der Ansprüche 21 bis 43, das ferner umfasst:
- Unterhalten einer Datenbank, die Informationen über einen äußeren Körperabschnitt für mehrere Subjekte enthält; und
- Ausführen einer Analyse anhand eines Vergleichs zwischen Informationen in der Datenbank und den ersten Informationen und/oder den zweiten Informationen und/oder der bestimmten Differenz zwischen den ersten Informationen und den zweiten Informationen und/oder den dritten Informationen und/oder der vierten Informationen und/oder der Differenz zwischen den dritten Informationen und den vierten Informationen.
45. Verfahren nach dem vorhergehenden Anspruch, das ferner das Speichern der ersten Informationen und/oder der zweiten Informationen und/oder der bestimmten Differenz zwischen den ersten Informationen und den zweiten Informationen und/oder der dritten Informationen und/oder der vierten Informationen und/oder der Differenz zwischen den dritten Informationen und den vierten Informationen in der Datenbank.
46. Verfahren nach einem der Ansprüche 21 bis 45, das ferner umfasst:
- Unterhalten eines Datensatzes einer Person; und
- Veranlassen des Speicherns der ersten Informationen und/oder der zweiten Informationen und/oder der bestimmten Differenz zwischen den ersten Informationen und den zweiten Informationen und/oder der dritten Informationen und/oder der vierten Informationen und/oder der Differenz zwischen den dritten Informationen und den vierten Informationen in dem Datensatz der Person.
47. Verfahren nach dem vorhergehenden Anspruch, das das Veranlassen des Speicherns von Informationen über die Person, die nach den dritten Informationen und den vierten Informationen ermittelt wurden, in dem Datensatz der Person umfasst.
48. Verfahren nach einem der Ansprüche 16 bis 47, wobei die kosmetische Behandlung das Anwenden eines kosmetischen, nicht medizinischen und nicht therapeutischen Produkts auf den ersten äußeren Körperabschnitt umfasst.
49. Verfahren nach einem der Ansprüche 16 bis 48, bei dem ferner der Person ermöglicht wird, Informationen bezüglich der Behandlung des ersten äußeren Körperabschnitts zu empfangen.
50. Verfahren nach einem der Ansprüche 16 bis 49, das ferner das Bestimmen einer nachfolgenden kosmetischen, nicht medizinischen und nicht therapeutischen Behandlung des ersten äußeren Körperabschnitts umfasst, wobei das Bestimmen der nachfolgenden kosmetischen Behandlung auf dem Vergleich zwischen den Differenzen basiert.
51. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, Informationen zumindest bezüglich der nachfolgenden kosmetischen Behandlung zu empfangen.
52. Verfahren nach einem der vorhergehenden Ansprüche, das ferner das Empfehlen wenigstens eines Produkts anhand der Differenz zwischen den ersten Informationen und den zweiten Informationen umfasst.
53. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, Informationen bezüglich des wenigstens einen Produkts zu empfangen.
54. Verfahren nach dem vorhergehenden Anspruch, wobei die Produktinformationen der Person unter Verwendung eines Paketlieferdienstes und/oder eines Computernetzes übermittelt werden.
55. Verfahren nach einem der vorhergehenden Ansprüche, wobei der wenigstens eine Umgebungsfaktor aus Ultraviolettstrahlung, extremer Temperatur, Wind, Umweltverschmutzung und Rasieren gewählt wird.
56. Verfahren nach einem der vorhergehenden Ansprüche, bei dem ferner der Person ermöglicht wird, eine Meldung über eine Einwirkung des wenigstens einen Umgebungsfaktors zu empfangen.
57. Verfahren nach einem der vorhergehenden Ansprüche, wobei der wenigstens eine Zustand, der durch die ersten Informationen repräsentiert wird, in dem zweiten äußeren Körperabschnitt im Wesentlichen nicht vorhanden ist.
58. Verfahren nach dem vorhergehenden Anspruch, wobei der wenigstens eine Zustand, der durch die ersten Informationen repräsentiert wird, Akne und/oder atopische Dermatitis umfasst.
59. Verfahren nach einem der vorhergehenden Ansprüche, wobei sowohl das Erhalten der ersten Informa-

- tionen als auch das Erhalten der zweiten Informationen das Ermitteln einer quantitativen Messung des wenigstens einen Zustandes umfasst.
- 60.** Verfahren nach dem vorhergehenden Anspruch, wobei die quantitative Messung ausgewählt wird aus der Comeometrie, der Dermal-Torqua-Messung, der pH-Messung, der Colorimetrie, der Sebumetrie, der Lipometrie, der Konfokalmessung, der Messung der epidermischen Umwandlung, der Hautschichtdickenmessung, der Blutmikrozirkulationsmessung, der Abschuppungsratenmessung, der Wasserverlustmessung, der Hauthydratationmessung, der Bewertung mit einem Werkzeug des Densiscorotyps und der Messung der Schwitzfunktion. 5
- 61.** Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen das Bestimmen wenigstens einer Differenz zwischen der quantitativen Messung des wenigstens einen Zustandes des ersten äußeren Körperabschnitts und der quantitativen Messung des wenigstens einen Zustandes des zweiten äußeren Körperabschnitts umfasst. 10
- 62.** Verfahren nach einem der vorherigen Ansprüche, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen das Erlangen wenigstens eines Bildes eines entsprechenden äußeren Körperabschnitts der Person umfasst. 15
- 63.** Verfahren nach dem vorhergehenden Anspruch, wobei das wenigstens eine Bild ausgewählt wird aus Photographien, gescannten Bildern, Ultraschallbildern, vergrößerten Bildern, Faltenprojektionen und Aufdrucken. 20
- 64.** Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen ferner das Analysieren des wenigstens einen Bildes umfasst, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustandes zu ermitteln. 25
- 65.** Verfahren nach dem vorhergehenden Anspruch, wobei das Analysieren des wenigstens einen Bildes das Zählen von Talgdrüsen und/oder das Zählen von Schweißdrüsen und/oder das Visualisieren von Aufdrucken in dem wenigstens einen Bild umfasst. 30
- 66.** Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen das Bestimmen wenigstens einer Differenz zwischen wenigstens einer Eigenschaft, die aus der Analyse wenigstens eines Bildes des ersten äußeren Körperabschnitts ermittelt wird und wenigstens einer Eigenschaft, die aus der Analyse wenigstens eines Bildes des zweiten äußeren Körperabschnitts ermittelt wird, umfasst. 35
- 67.** Verfahren nach einem der vorherigen Ansprüche, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen das Erhalten wenigstens einer Probe eines äußeren Körperabschnitts umfasst. 40
- 68.** Verfahren nach dem vorhergehenden Anspruch, wobei die wenigstens eine Probe ausgewählt wird aus Hautzellen, Sekretionen, einem bioanalytischen Inhalt, einem bakteriologischen Inhalt und einem enzymatischen Inhalt. 45
- 69.** Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Erfassen der wenigstens einen Probe unter Verwendung einer Technik ausgeführt wird, die aus Klebesammeln, Absorption und Abrieb ausgewählt wird. 50
- 70.** Verfahren nach einem der Ansprüche 67 bis 69, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen ferner das Analysieren der wenigstens einen Probe umfasst, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustandes zu ermitteln. 55
- 71.** Verfahren nach dem vorhergehenden Anspruch, wobei die qualitative Eigenschaft auf das Vorhandensein oder Fehlen wenigstens einer Komponente bezogen ist und die quantitative Eigenschaft auf die relative Menge wenigstens einer Komponente in der Probe bezogen ist.
- 72.** Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei das Analysieren der wenigstens einen Probe unter Verwendung einer optischen und/oder chemischen und/oder biologischen Analysetechnik ausgeführt wird.
- 73.** Verfahren nach dem vorhergehenden Anspruch, wobei die Analysetechnik ausgewählt wird aus der Gaschromatographie/Massenspektrometrie, der Gaschromatographie/ Massenspektrometrie/ Massenspektrometrie, der Flüssigkeitschromatographie/Massenspektrometrie, der Flüssigkeitschromatographie/ Massenspektrometrie/ Massenspektrometrie, der Ultraviolettbeobachtung, der Fluoreszenzbeobachtung, der Infrarotbeobachtung, der Raman spektrophotometrischen Beobachtung und der Röntgenstrahlbeobachtung.

74. Verfahren nach einem der Ansprüche 70 bis 73, wobei das Bestimmen der Differenz zwischen den ersten Informationen und den zweiten Informationen das Bestimmen wenigstens einer Differenz zwischen wenigstens einer Eigenschaft, die aus der Analyse wenigstens einer Probe des ersten Körperabschnitts ermittelt wird, und wenigstens einer Eigenschaft, die aus der Analyse wenigstens einer Probe des zweiten Körperabschnitts ermittelt wird, umfasst. 5
75. Verfahren nach einem der vorhergehenden Ansprüche, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen das Empfangen von Informationen umfasst, die aus einer quantitativen Messung des wenigstens einen Zustandes, wenigstens einem Bild eines jeweiligen äußeren Körperabschnitts der Person und wenigstens einer Probe eines äußeren Körperabschnitts ausgewählt sind. 10
76. Verfahren nach dem vorhergehenden Anspruch, wobei sowohl das Erhalten der ersten Informationen als auch das Erhalten der zweiten Informationen ferner das Analysieren des wenigstens einen Bildes, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustandes zu ermitteln, und/oder das Analysieren der wenigstens einen Probe, um eine qualitative Eigenschaft und/oder eine quantitative Eigenschaft bezüglich des wenigstens einen Zustandes zu ermitteln, umfasst. 15
77. Verfahren nach einem der zwei vorhergehenden Ansprüche, wobei die Informationen über einen Paketlieferdienst und/oder ein Computernetz empfangen werden. 20
78. Verfahren nach einem der vorhergehenden Ansprüche, das ferner umfasst:
- Unterhalten einer Datenbank, die Informationen über einen äußeren Körperabschnitt für mehrere Personen enthält; und  
Ausführen einer Analyse anhand eines Vergleichs zwischen Informationen in der Datenbank und den ersten Informationen und/oder den zweiten Informationen und/oder der bestimmten Differenz. 25
79. Verfahren nach dem vorhergehenden Anspruch, das ferner das Speichern der ersten Informationen und/oder der zweiten Informationen und/oder der bestimmten Differenz in der Datenbank umfasst. 30
80. Verfahren nach einem der vorhergehenden Ansprüche, das ferner umfasst:
- Unterhalten eines Datensatzes einer Person; und  
Veranlassen des Speicherns der ersten Informationen und/oder der zweiten Informationen und/oder der bestimmten Differenz in dem Datensatz der Person. 35
81. Verfahren nach dem vorhergehenden Anspruch, das ferner das Veranlassen des Speicherns von Informationen über die Person, die nach den ersten Informationen und den zweiten Informationen ermittelt werden, in dem Datensatz der Person umfasst. 40
82. Verfahren nach einem der zwei vorhergehenden Ansprüche, bei dem der Person ferner ermöglicht wird, wenigstens auf einen Teil der in dem Datensatz der Person gespeicherten Informationen zuzugreifen. 45
83. Verfahren nach dem vorhergehenden Anspruch, bei dem ferner der Person ermöglicht wird, auf die Informationen über einen Paketlieferdienst und/oder ein Computernetz zuzugreifen. 50
84. Verfahren nach einem der zwei vorhergehenden Ansprüche, bei dem der Person ferner ermöglicht wird, die Informationen graphisch anzuzeigen. 55
85. Verfahren nach einem der vorhergehenden Ansprüche, wobei der zweite äußere Körperabschnitt dem wenigstens einen Umgebungsfaktor während des Lebens der Person weniger stark ausgesetzt ist als der erste äußere Körperabschnitt.
86. Verfahren nach einem der vorhergehenden Ansprüche, wobei der zweite äußere Körperabschnitt normalerweise mit Kleidung bedeckt ist und/oder seine Aussetzung an die Umgebung durch einen weiteren Abschnitt des Körpers blockiert ist und/oder ein Bereich ist, der normalerweise nicht rasiert ist.

#### Revendications

1. Procédé permettant une analyse prenant en compte l'exposition d'au moins une partie externe du corps à l'environnement, le procédé comportant les étapes consistant à :
- obtenir une première information représentative d'au moins un état d'une première partie externe du corps d'un sujet ;  
obtenir une deuxième information représentative d'au moins un état d'une seconde partie externe du corps du sujet, la seconde partie externe du corps étant différente de la première partie et moins exposée à au moins un facteur environnemental que la première partie externe du corps; et

- déterminer une différence entre la première information et la deuxième information de manière à permettre une analyse prenant en compte l'impact de l'au moins un facteur environnemental, **caractérisé en ce que** la première partie externe du corps comprend la peau située sur le visage du sujet, et la seconde partie externe du corps comprend l'une de la peau située sur les fesses du sujet et de la peau située sur une surface interne d'une partie supérieure d'au moins un des bras du sujet.
2. Procédé selon la revendication précédente, dans lequel l'au moins un état comprend au moins un de la texture, l'élasticité, la sécheresse, la cellulite, la sudation, le vieillissement, les rides, l'exfoliation, la desquamation, l'homogénéité de couleur, la microcirculation, la brillance, la douceur, le caractère lisse, l'hydratation, la production de sébum, la propreté, l'irritation, la rougeur, la vasomotion, la vasodilatation, la vasoconstriction, la pigmentation et les taches de rousseur.
  3. Procédé selon l'une quelconque des revendications précédentes, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication de la différence entre la première information et la deuxième information.
  4. Procédé selon la revendication précédente, comportant en outre l'étape consistant à envoyer l'indication au sujet via au moins l'un d'un service de distribution par paquets et un réseau informatique.
  5. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'indication comprend une illustration graphique.
  6. Procédé selon l'une quelconque des revendications précédentes, comportant en outre l'étape consistant à appliquer un produit cosmétique non médical et non thérapeutique à la première partie externe du corps du sujet.
  7. Procédé selon la revendication précédente, comportant en outre l'étape consistant à appliquer le produit cosmétique à la seconde partie externe du corps du sujet.
  8. Procédé selon l'une quelconque des revendications précédentes, dans lequel la première partie externe du corps a été enduite d'un produit cosmétique, non médical et non thérapeutique, et dans lequel la détermination de la différence entre la première information et la deuxième information fournit des informations sur le produit.
  9. Procédé selon l'une quelconque des revendications précédentes, dans lequel la première partie externe du corps et la seconde partie externe du corps ont été enduites d'un produit cosmétique, non médical et non thérapeutique, et dans lequel la détermination de la différence entre la première information et la deuxième information fournit des informations sur le produit cosmétique.
  10. Procédé selon l'une quelconque des revendications précédentes, dans laquelle la première information est représentative d'au moins un état de la première partie externe du corps du sujet à un premier instant environ, et dans lequel la deuxième information est représentative de l'au moins un état de la seconde partie externe du corps au premier instant environ, le procédé comportant en outre les étapes consistant à :
    - obtenir une troisième information, dans laquelle la troisième information est représentative de l'au moins un état de la première partie externe du corps du sujet à un second instant environ, dans lequel le second instant se produit au moins un certain temps après le premier instant; et
    - déterminer une différence entre la troisième information et la deuxième information.
  11. Procédé selon la revendication précédente, consistant en outre à comparer la différence entre la première information et la deuxième information avec la différence entre la troisième information et la deuxième information de manière à permettre une analyse prenant en compte l'impact de l'au moins un facteur environnemental sur au moins la période de temps.
  12. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication de l'impact de l'au moins un facteur environnemental sur au moins la période de temps.
  13. Procédé selon l'une quelconque des revendications 1 à 9, dans lequel la première information est représentative de l'au moins un état de la première partie externe du corps du sujet à un premier moment environ, et dans lequel la deuxième information est représentative de l'au moins un état de la seconde partie externe du corps du sujet au premier instant environ, le procédé comportant en outre les étapes consistant à :
    - obtenir une troisième information, la troisième information étant représentative de l'au moins un état de la première partie externe du corps du sujet à un second instant environ;
    - obtenir une quatrième information, la quatrième

- information étant représentative de l'au moins un état de la seconde partie externe du corps du sujet au second instant environ, le second instant se produisant au moins un certain temps après le premier instant ; et déterminer une différence entre la troisième information et la quatrième information.
14. Procédé selon la revendication précédente, comportant en outre l'étape consistant à comparer la différence entre la première information et la deuxième information avec la différence entre la troisième information et la quatrième information, de manière à permettre une analyse prenant en compte l'impact de l'au moins un facteur environnemental sur au moins la période de temps.
15. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication de l'impact de l'au moins un facteur environnemental sur au moins la période de temps.
16. Procédé selon l'une quelconque des revendications précédentes, comportant en outre l'étape consistant à choisir un traitement cosmétique, non médical et non thérapeutique pour la première partie de corps externe sur la base de la différence entre la première information et la deuxième information.
17. Procédé selon l'une quelconque des revendications 1 à 9, comportant en outre l'étape consistant à :
- obtenir une troisième information, la troisième information étant représentative de l'au moins un état de la première partie externe du corps au moins un certain temps après le début d'un traitement cosmétique non médical et non thérapeutique de la première partie externe du corps; et déterminer une différence entre la troisième information et la deuxième information.
18. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication de l'au moins une différence entre la première information et la deuxième information et la différence entre la troisième information et la deuxième information.
19. Procédé selon l'une quelconque des deux revendications précédentes, comportant en outre l'étape consistant à comparer la différence entre la première information et la deuxième information avec la différence entre la troisième information et la deuxième information de manière à permettre une détermination d'au moins l'efficacité initiale du traitement cosmétique.
20. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication d'au moins l'efficacité initiale du traitement cosmétique.
21. Procédé selon l'une quelconque des revendications 1 à 9, dans lequel la première information est représentative de l'au moins un état de la première partie externe du corps du sujet à un premier instant environ, et dans lequel la deuxième information est représentative de l'au moins un état de la seconde partie externe du corps du sujet au premier instant environ, le procédé comportant en outre les étapes consistant à :
- obtenir une troisième information, la troisième information étant représentative de l'au moins un état de la première partie externe du corps du sujet à un second instant environ ; obtenir une quatrième information, la quatrième information étant représentative de l'au moins un état de la seconde partie externe du corps du sujet au second instant environ, le second instant se produisant au moins un certain temps après le début d'un traitement cosmétique non médical et non thérapeutique de la première partie externe du corps; et déterminer une différence entre la troisième information et la quatrième information.
22. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication de l'au moins une de la différence entre la première information et la deuxième information et de la différence entre la troisième information et la quatrième information.
23. Procédé selon la revendication précédente, comportant en outre l'étape consistant à comparer la différence entre la première information et la deuxième information avec la différence entre la troisième information et la quatrième information de sorte à permettre une détermination d'au moins l'efficacité initiale du traitement cosmétique.
24. Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir une indication d'au moins l'efficacité initiale du traitement cosmétique.
25. Procédé selon les revendications 21 à 24, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information, de l'obtention de la troisième information et de l'obtention de la quatrième information comprend l'acquisition d'une mesure quantitative d'au moins un état.
26. Procédé selon la revendication précédente, dans le-

- quel la mesure quantitative est choisie parmi la cornéométrie, la mesure de torsion dermique, la mesure du pH, la colorimétrie, la sébumétrie, la lipométrie, la mesure confocale, la mesure du renouvellement épidermique, la mesure de l'épaisseur de la couche cutanée, la mesure de la microcirculation sanguine, la mesure de la vitesse de desquamation, la mesure de la perte d'eau, la mesure de l'hydratation cutanée, la cotation avec un outil de type DensiScore, et la mesure de la fonction sudatoire.
27. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel chacune de la détermination de la différence entre la première information et la deuxième information et de la détermination de la différence entre la troisième information et la quatrième information comprend la détermination d'au moins une différence entre des mesures quantitatives.
28. Procédé selon l'une quelconque des revendications 21 à 27, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information et de l'obtention de la quatrième information comprend l'acquisition d'au moins une image d'une partie externe respective du corps du sujet.
29. Procédé selon la revendication précédente, dans lequel l'au moins une image est choisie parmi des photographies, images scannées, images ultrasoniques, images agrandies, projections de rides et empreintes.
30. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information, de l'obtention de la troisième information et de l'obtention de la quatrième information comprend l'analyse de l'au moins une image pour déterminer au moins l'une d'une propriété qualitative et d'une propriété quantitative relative à l'au moins un état.
31. Procédé selon la revendication précédente, dans lequel l'analyse de l'au moins une image comprend au moins un du comptage des glandes sébacées, du comptage des glandes sudoripares et de la visualisation des empreintes dans l'au moins une image.
32. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel chacune de la détermination de la différence entre la première information et la deuxième information et de la détermination de la différence entre la troisième information et la quatrième information consiste à déterminer au moins une différence entre les propriétés détermi-
- nées à partir de l'analyse des images.
33. Procédé selon l'une quelconque des revendications 21 à 32, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information, de l'obtention de la troisième information et de l'obtention de la quatrième information comprend l'acquisition d'au moins un échantillon de la partie de corps externe.
34. Procédé selon la revendication précédente, dans lequel l'au moins un échantillon est choisi parmi les cellules cutanées, les sécrétions, le contenu bioanalytique, le contenu bactériologique et le contenu enzymatique.
35. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'acquisition de l'au moins un échantillon est effectuée en utilisant une technique choisie parmi la collecte par adhérence, l'absorption et l'abrasion.
36. Procédé selon l'une quelconque des revendications 33 à 35, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information et de l'obtention de la quatrième information comprend en outre l'analyse de l'au moins un échantillon pour déterminer au moins une d'une propriété qualitative et d'une propriété quantitative relative à l'au moins un état.
37. Procédé selon la revendication précédente, dans lequel la propriété qualitative concerne l'une de la présence et de l'absence d'au moins un composant, et la propriété quantitative concerne la quantité relative d'au moins un composant dans l'échantillon.
38. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'analyse de l'au moins un échantillon est effectuée en utilisant au moins une d'une technique d'analyse optique, chimique et biologique.
39. Procédé selon la revendication précédente, dans lequel la technique d'analyse est choisie parmi la chromatographie en phase gazeuse/spectrométrie de masse, la chromatographie en phase gazeuse/spectrométrie de masse/spectrométrie de masse, la chromatographie en phase liquide/spectrométrie de masse, la chromatographie en phase liquide/spectrométrie de masse/spectrométrie de masse, l'observation aux ultraviolets, l'observation par fluorescence, l'observation infrarouge, l'observation au spectrophotomètre Raman et l'observation aux rayons X.
40. Procédé selon l'une quelconque des revendications

- 36 à 39, dans lequel chacune de la détermination de la différence entre la première information et la deuxième information et de la détermination de la différence entre la troisième information et la quatrième information comprend la détermination d'au moins une différence entre les propriétés déterminées à partir de l'analyse des échantillons.
- 41.** Procédé selon l'une quelconque des revendications 21 à 40, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information, de l'obtention de la troisième information et de l'obtention de la quatrième information comprend la réception de l'information choisie parmi une mesure quantitative de l'au moins un état, au moins une image de la partie externe du corps, et au moins un échantillon de la partie externe du corps.
- 42.** Procédé selon la revendication précédente, dans lequel chacune de l'obtention de la première information, de l'obtention de la deuxième information, de l'obtention de la troisième information et de l'obtention de la quatrième information comprend au moins l'une de l'analyse de l'au moins une image pour déterminer au moins l'une d'une propriété qualitative et d'une propriété quantitative concernant l'au moins un état et de l'analyse de l'au moins un échantillon pour déterminer au moins l'une d'une propriété qualitative et d'une propriété quantitative relative à l'au moins un état.
- 43.** Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'information est reçue via au moins un service de distribution par paquets et un réseau informatique.
- 44.** Procédé selon l'une quelconque des revendications 21 à 43, comportant en outre les étapes consistant à :
- conserver une base de données contenant des informations des parties externes du corps pour une pluralité de sujets ; et  
conduire une analyse basée sur une comparaison entre les informations dans la base de données et au moins une de la première information, de la deuxième information, de la différence déterminée entre la première information et la deuxième information, de la troisième information, de la quatrième information et de la différence entre la troisième information et la quatrième information.
- 45.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à enregistrer au moins l'une de la première information, de la deuxième information, de la différence déterminée entre la première information et la deuxième information, de
- la troisième information, de la quatrième information, et de la différence entre la troisième information et la quatrième information dans la base de données.
- 46.** Procédé selon l'une quelconque des revendications 21 à 45, comportant en outre les étapes consistant à :
- conserver un enregistrement relatif au sujet ; et  
enregistrer dans l'enregistrement relatif au sujet au moins l'une de la première information, de la deuxième information, de la différence déterminée entre la première information et la deuxième information, de la troisième information, de la quatrième information et de la différence entre la troisième information et la quatrième information.
- 47.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à enregistrer dans un enregistrement relatif au sujet les informations sur le sujet acquises suite à la troisième information et à la quatrième information.
- 48.** Procédé selon l'une quelconque des revendications 16 à 47, dans lequel le traitement cosmétique comprend l'application d'un produit cosmétique non médical et non thérapeutique à la première partie externe du corps.
- 49.** Procédé selon l'une quelconque des revendications 16 à 48, comportant en outre l'étape consistant à permettre au sujet de recevoir des informations concernant le traitement de la première partie externe du corps.
- 50.** Procédé selon l'une quelconque des revendications 16 à 49, comportant en outre l'étape consistant à déterminer un traitement cosmétique non médical et non thérapeutique ultérieur pour la première partie externe du corps, la détermination du traitement cosmétique ultérieur étant basée sur la comparaison entre les différences.
- 51.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir des informations concernant au moins le traitement cosmétique ultérieur.
- 52.** Procédé selon l'une quelconque des revendications précédentes, comportant en outre l'étape consistant à recommander au moins un produit sur la base de la différence entre la première information et la deuxième information.
- 53.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet de recevoir des informations concernant l'au moins

- un produit.
54. Procédé selon la revendication précédente, dans lequel les informations sur le produit sont communiquées au sujet utilisant au moins un d'un service de distribution par paquets et un réseau informatique.
55. Procédé selon l'une quelconque des revendications précédentes, dans lequel l'au moins un facteur environnemental est choisi parmi le rayonnement ultraviolet, la température extrême, le vent, la pollution et le rasage.
56. Procédé selon l'une quelconque des revendications précédentes, comportant en outre l'étape consistant à permettre au sujet de recevoir une notification sur un impact de l'au moins un facteur environnemental.
57. Procédé selon l'une quelconque des revendications précédentes, dans lequel l'au moins un état représenté par la première information est sensiblement absent de la seconde partie externe du corps.
58. Procédé selon la revendication précédente, dans lequel l'au moins un état représenté par la première information comprend au moins l'un de l'acné et de la dermatite atopique.
59. Procédé selon l'une quelconque des revendications précédentes, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend l'acquisition d'une mesure quantitative de l'au moins un état.
60. Procédé selon la revendication précédente, dans lequel la mesure quantitative est choisie parmi la cornéométrie, la mesure de torsion dermique, la mesure du pH, la colorimétrie, la sébumétrie, la lipométrie, la mesure confocale, la mesure du renouvellement épidermique, la mesure de l'épaisseur de la couche cutanée, la mesure de la microcirculation sanguine, la mesure de la vitesse de desquamation, la mesure de la perte d'eau, la mesure de l'hydratation cutanée, la cotation avec un outil de type DensiScore, et la mesure de la fonction sudatoire.
61. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel la détermination de la différence entre la première information et la deuxième information comprend la détermination d'au moins une différence entre la mesure quantitative de l'au moins un état de la première partie externe du corps et la mesure quantitative de l'au moins un état de la seconde partie externe du corps.
62. Procédé selon l'une quelconque des revendications précédentes, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend l'acquisition d'au moins une image d'une partie externe du corps respective du sujet.
63. Procédé selon la revendication précédente, dans lequel l'au moins une image est choisie parmi des photographies, images scannées, images ultrasoniques, images agrandies, projections de rides et empreintes.
64. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend l'analyse de l'au moins une image pour déterminer au moins l'une d'une propriété qualitative et d'une propriété quantitative relative à l'au moins un état.
65. Procédé selon la revendication précédente, dans lequel l'analyse de l'au moins une image comprend au moins un du comptage des glandes sébacées, du comptage des glandes sudoripares et de la visualisation des empreintes dans l'au moins une image.
66. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel la détermination de la différence entre la première information et la deuxième information consiste à déterminer au moins une différence entre au moins une propriété déterminée à partir de l'analyse d'au moins une image de la première partie externe du corps et au moins une propriété déterminée à partir de l'analyse d'au moins une image de la seconde partie externe du corps.
67. Procédé selon l'une quelconque des revendications précédentes, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend l'acquisition d'au moins un échantillon de la partie externe du corps.
68. Procédé selon la revendication précédente, dans lequel l'au moins un échantillon est choisi parmi les cellules cutanées, les sécrétions, le contenu bioanalytique, le contenu bactériologique et le contenu enzymatique.
69. Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'acquisition de l'au moins un échantillon est effectuée en utilisant une technique choisie parmi la collecte par adhérence, l'absorption et l'abrasion.
70. Procédé selon l'une quelconque des revendications 67 à 69, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend en outre l'analyse de l'au

- moins un échantillon pour déterminer au moins une d'une propriété qualitative et d'une propriété quantitative relative à l'au moins un état.
- 71.** Procédé selon la revendication précédente, dans lequel la propriété qualitative concerne une de la présence et de l'absence d'au moins un composant, et la propriété quantitative concerne la quantité relative d'au moins un composant dans l'échantillon. 5
- 72.** Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'analyse de l'au moins un échantillon est effectuée en utilisant au moins une d'une technique d'analyse optique, chimique et biologique. 10
- 73.** Procédé selon la revendication précédente, dans lequel la technique d'analyse est choisie parmi la chromatographie en phase gazeuse/spectrométrie de masse, la chromatographie en phase gazeuse/spectrométrie de masse/spectrométrie de masse, la chromatographie en phase liquide/spectrométrie de masse, la chromatographie en phase liquide/spectrométrie de masse/spectrométrie de masse, l'observation aux ultraviolets, l'observation par fluorescence, l'observation infrarouge, l'observation au spectrophotomètre Raman et l'observation aux rayons X. 20
- 74.** Procédé selon l'une quelconque des revendications 70 à 73, dans lequel la détermination de la différence entre la première information et la deuxième information comprend la détermination d'au moins une différence entre au moins une propriété déterminée à partir de l'analyse d'au moins un échantillon de la première partie du corps et d'au moins une propriété déterminée à partir de l'analyse d'au moins un échantillon dans la seconde partie du corps. 25
- 75.** Procédé selon l'une quelconque des revendications précédentes, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend la réception de l'information choisie parmi une mesure quantitative de l'au moins un état, au moins une image de partie de corps externe, et au moins un échantillon de partie de corps externe. 30
- 76.** Procédé selon la revendication précédente, dans lequel chacune de l'obtention de la première information et de l'obtention de la deuxième information comprend au moins une de l'analyse de l'au moins une image pour déterminer au moins une d'une propriété qualitative et d'une propriété quantitative concernant l'au moins un état et de l'analyse de l'au moins un échantillon pour déterminer au moins une d'une propriété qualitative et d'une propriété quantitative concernant l'au moins un état. 35
- 77.** Procédé selon l'une quelconque des deux revendications précédentes, dans lequel l'information est reçue via au moins un service de distribution par paquets et un réseau informatique. 40
- 78.** Procédé selon l'une quelconque des revendications précédentes, comportant en outre les étapes consistant à : 45
- conserver une base de données contenant des informations de parties externes du corps pour une pluralité de sujets ; et
  - conduire une analyse basée sur une comparaison entre les informations dans la base de données et au moins une de la première information, de la deuxième information et de la différence déterminée.
- 79.** Procédé selon la revendication précédente, consistant en outre à enregistrer au moins une de la première information, de la deuxième information et de la différence déterminée dans la base de données. 50
- 80.** Procédé selon l'une quelconque des revendications précédentes, comportant en outre les étapes consistant à : 55
- conserver un enregistrement relatif au sujet ; et
  - enregistrer dans l'enregistrement relatif au sujet au moins une de la première information, de la deuxième information et de la différence déterminée.
- 81.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à enregistrer dans l'enregistrement relatif au sujet les informations sur le sujet acquises suite à la première information et à la deuxième information.
- 82.** Procédé selon l'une quelconque des deux revendications précédentes; comportant en outre l'étape consistant à permettre au sujet d'accéder à au moins une partie des informations stockées dans l'enregistrement relatif au sujet.
- 83.** Procédé selon la revendication précédente, comportant en outre l'étape consistant à permettre au sujet d'accéder aux informations via au moins un d'un service de distribution par paquets et d'un réseau informatique.
- 84.** Procédé selon l'une quelconque des deux revendications précédentes, comportant en outre l'étape consistant à permettre au sujet d'afficher graphiquement les informations.
- 85.** Procédé selon l'une quelconque des revendications précédentes, dans lequel la seconde partie de corps

externe est moins exposée à l'au moins un facteur environnemental que la première partie externe du corps pendant la vie du sujet.

86. Procédé selon l'une quelconque des revendications précédentes, dans lequel la seconde partie externe du corps est normalement couverte d'un vêtement et/ou l'exposition à l'environnement est bloquée par une autre partie du corps et/ou est une zone qui n'est normalement pas rasée.

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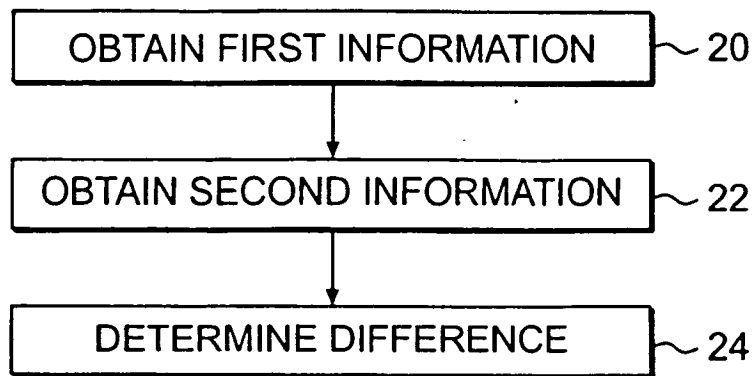
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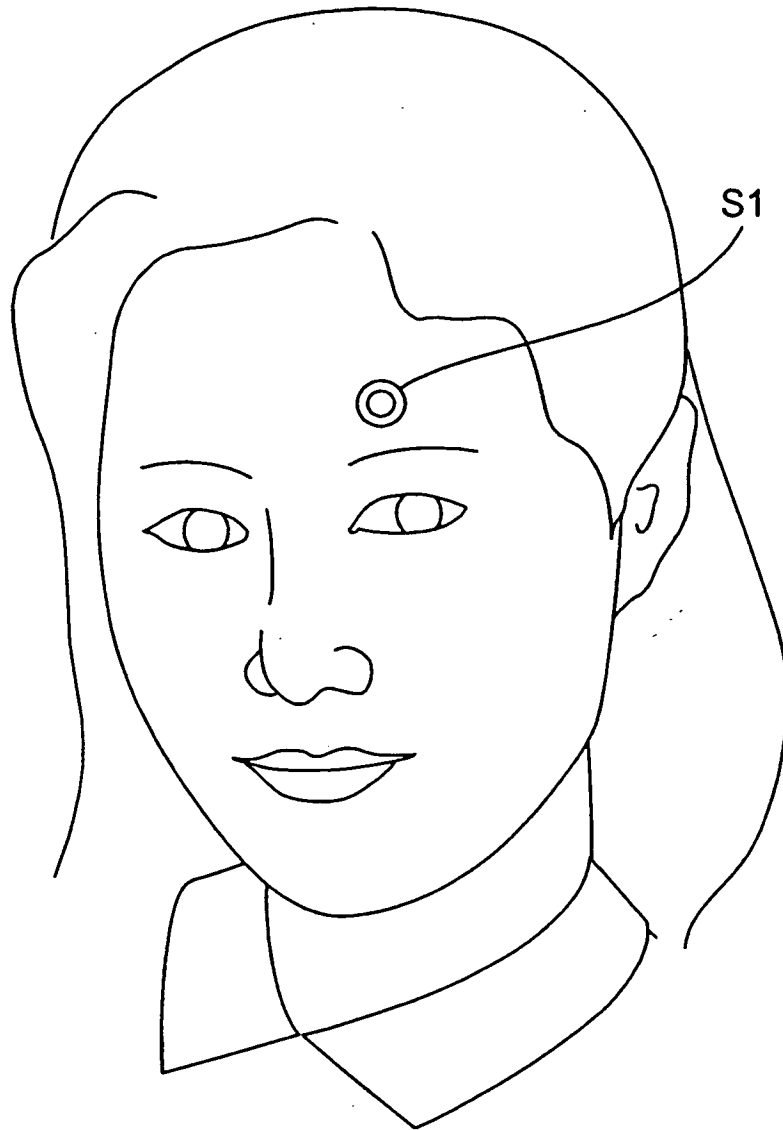
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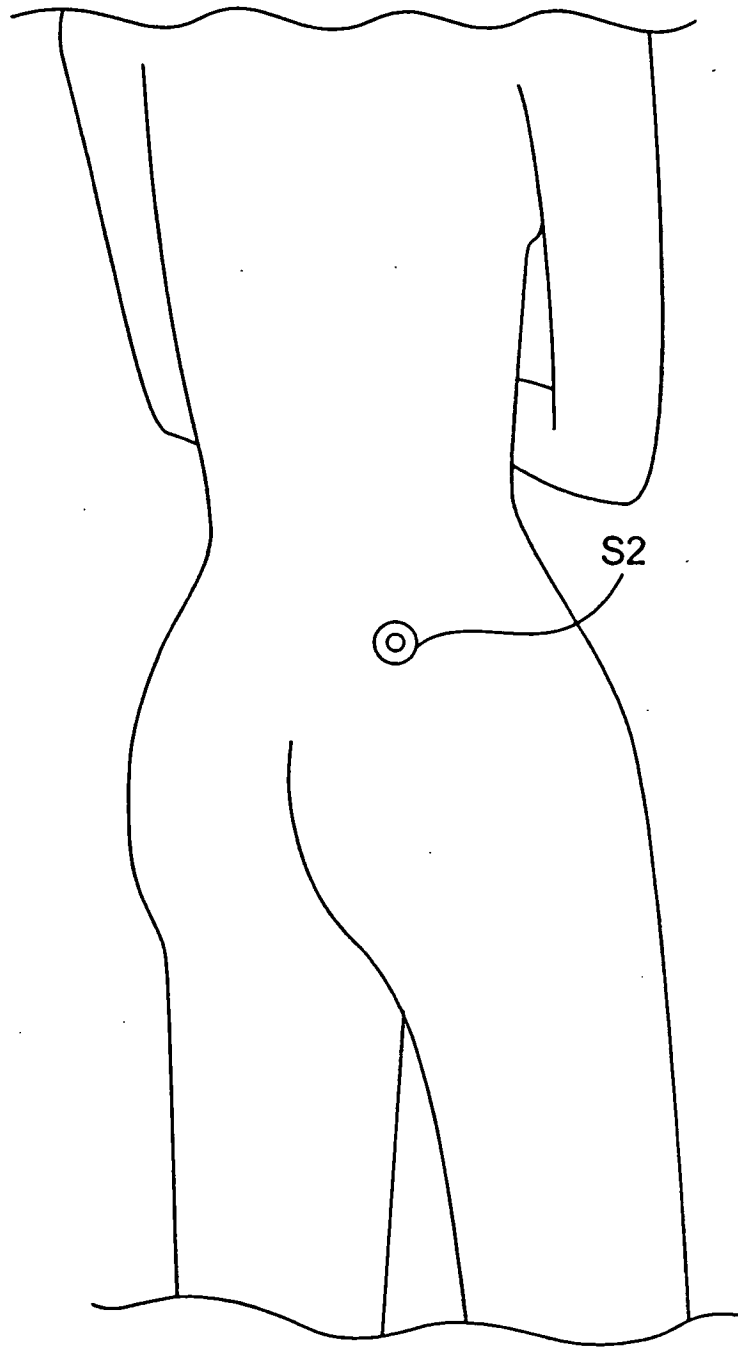
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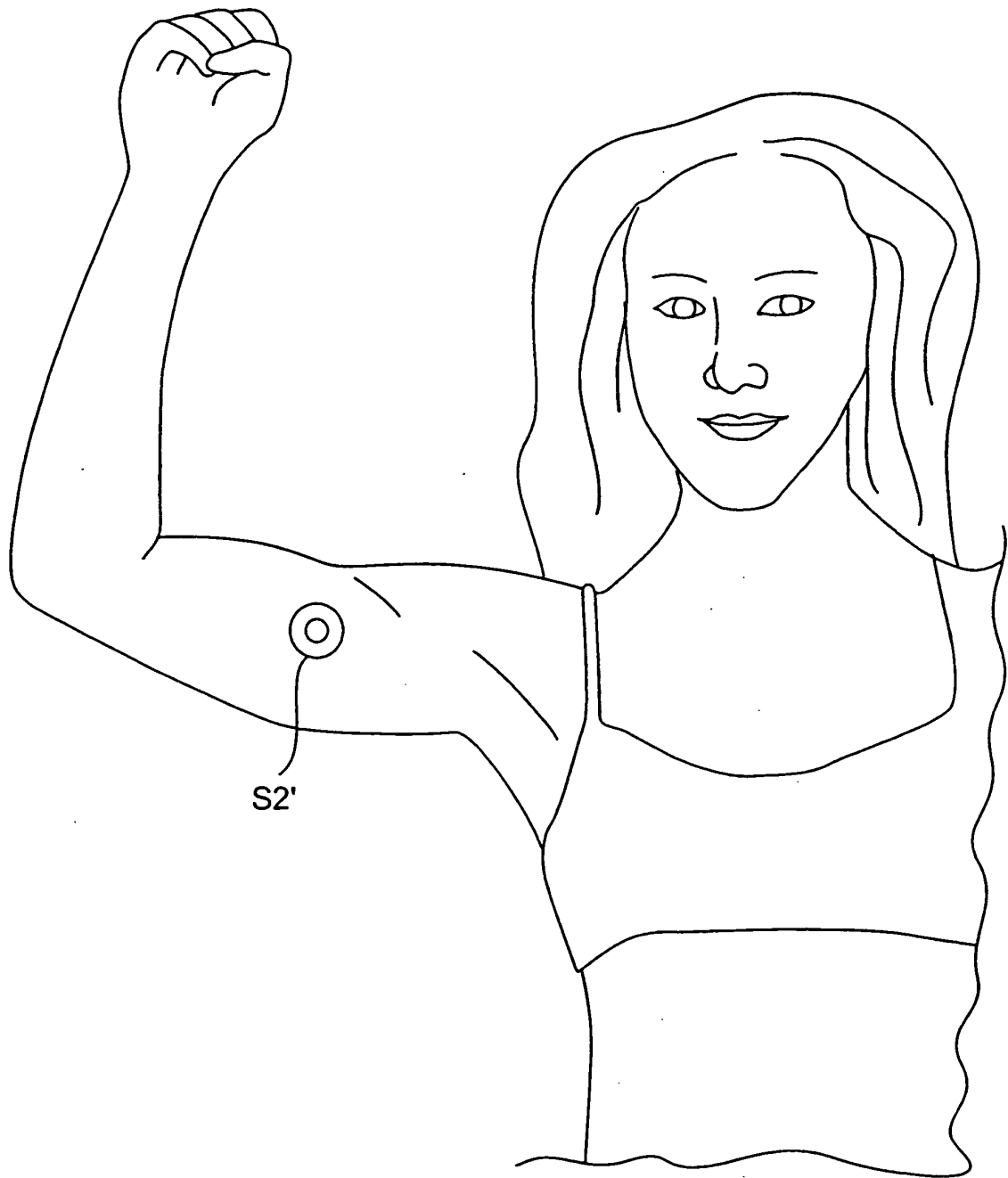
**FIG. 1**



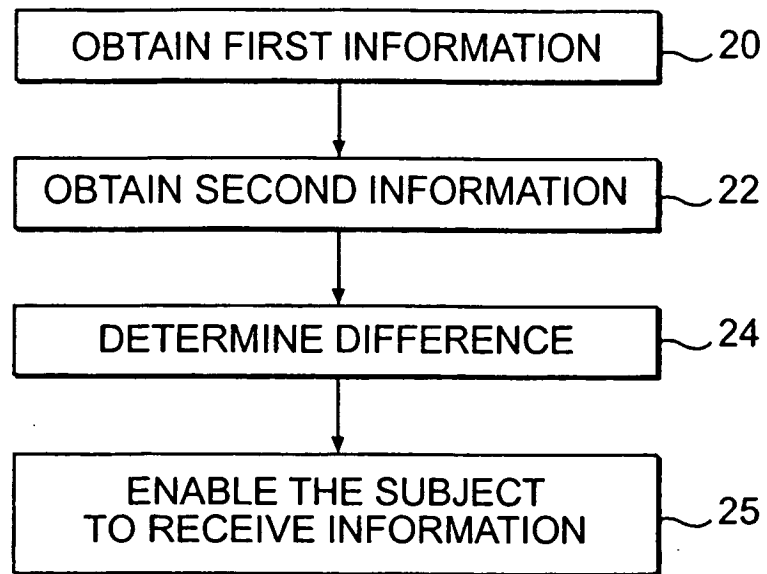
**FIG. 2**



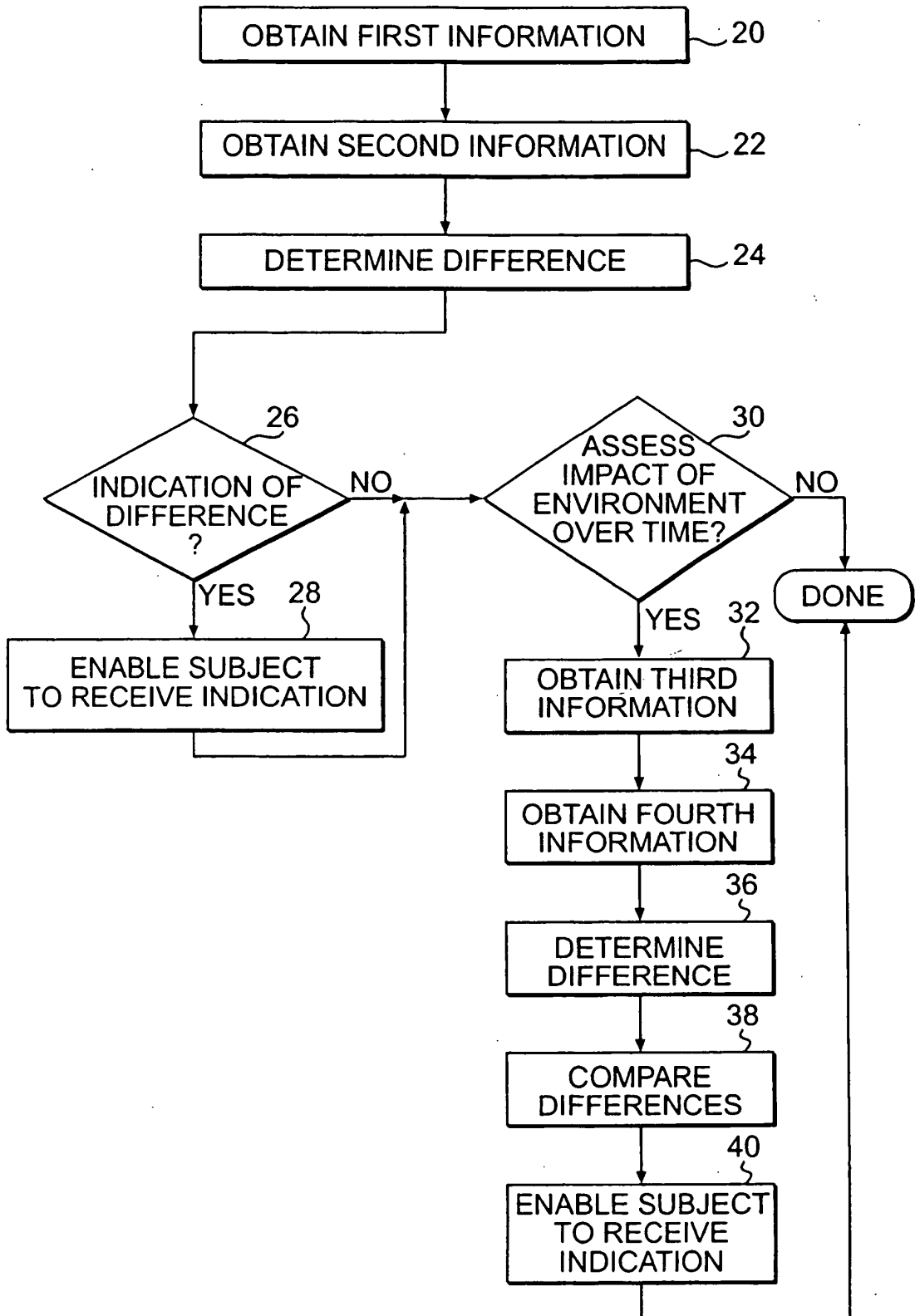
**FIG. 3**



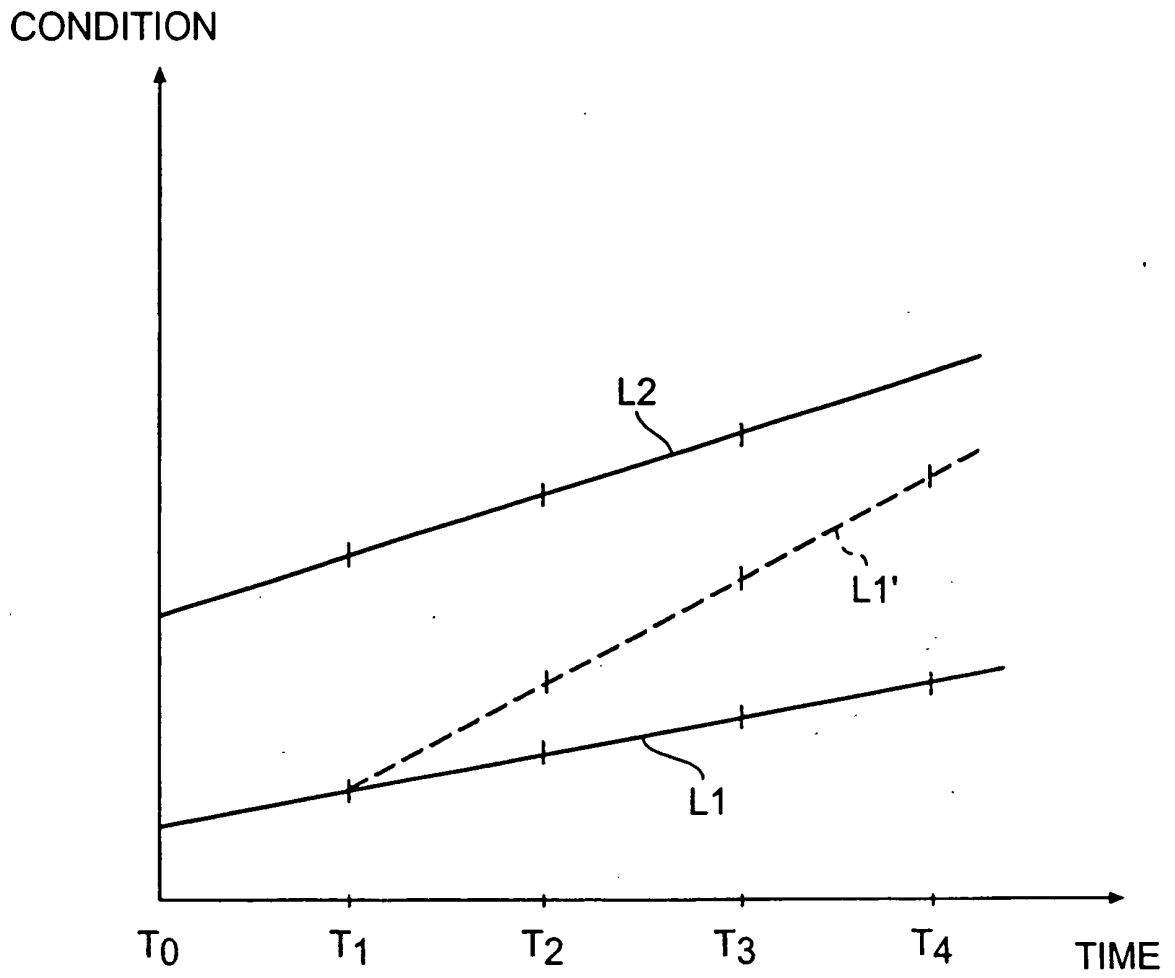
**FIG. 4**



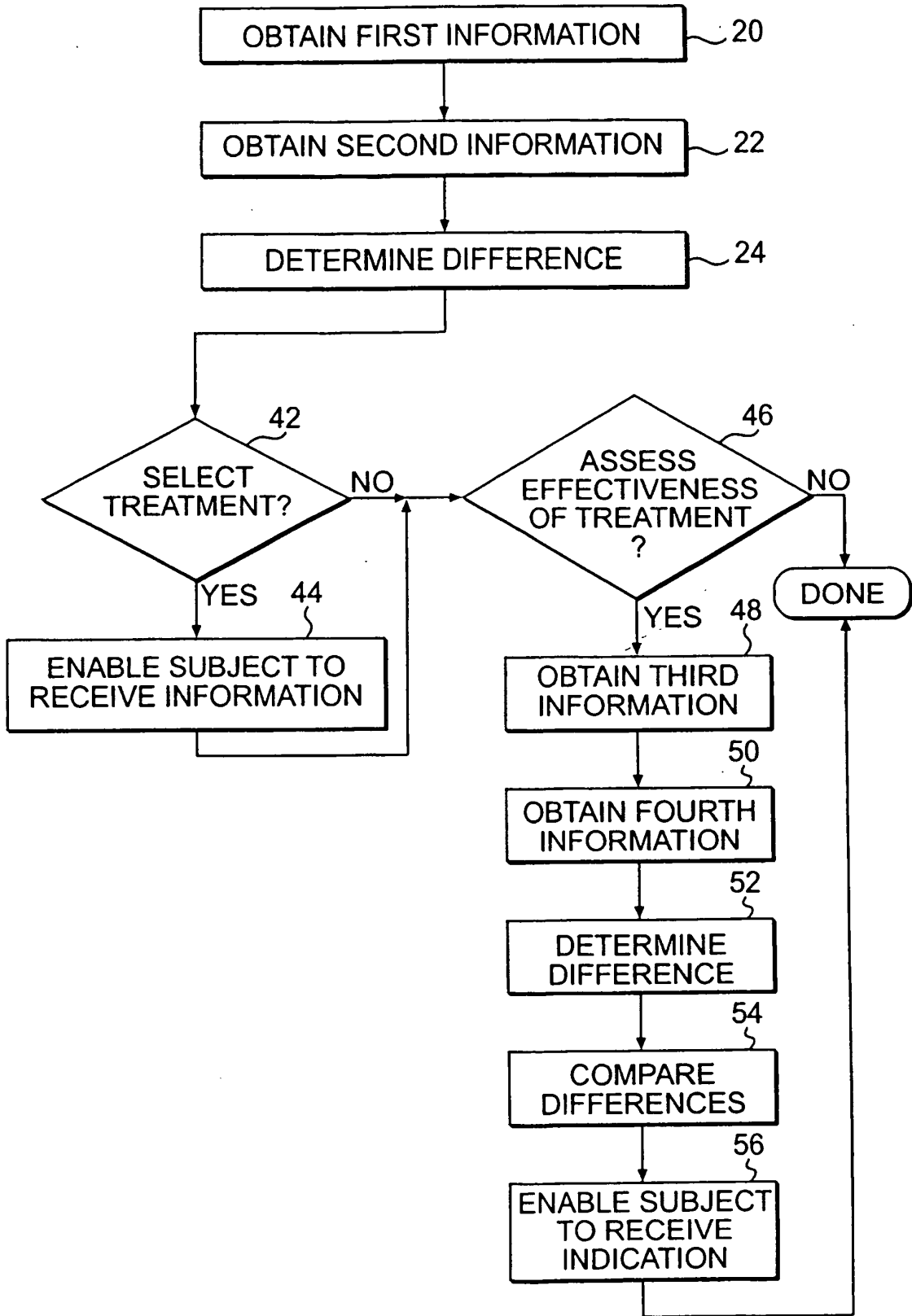
**FIG. 5**



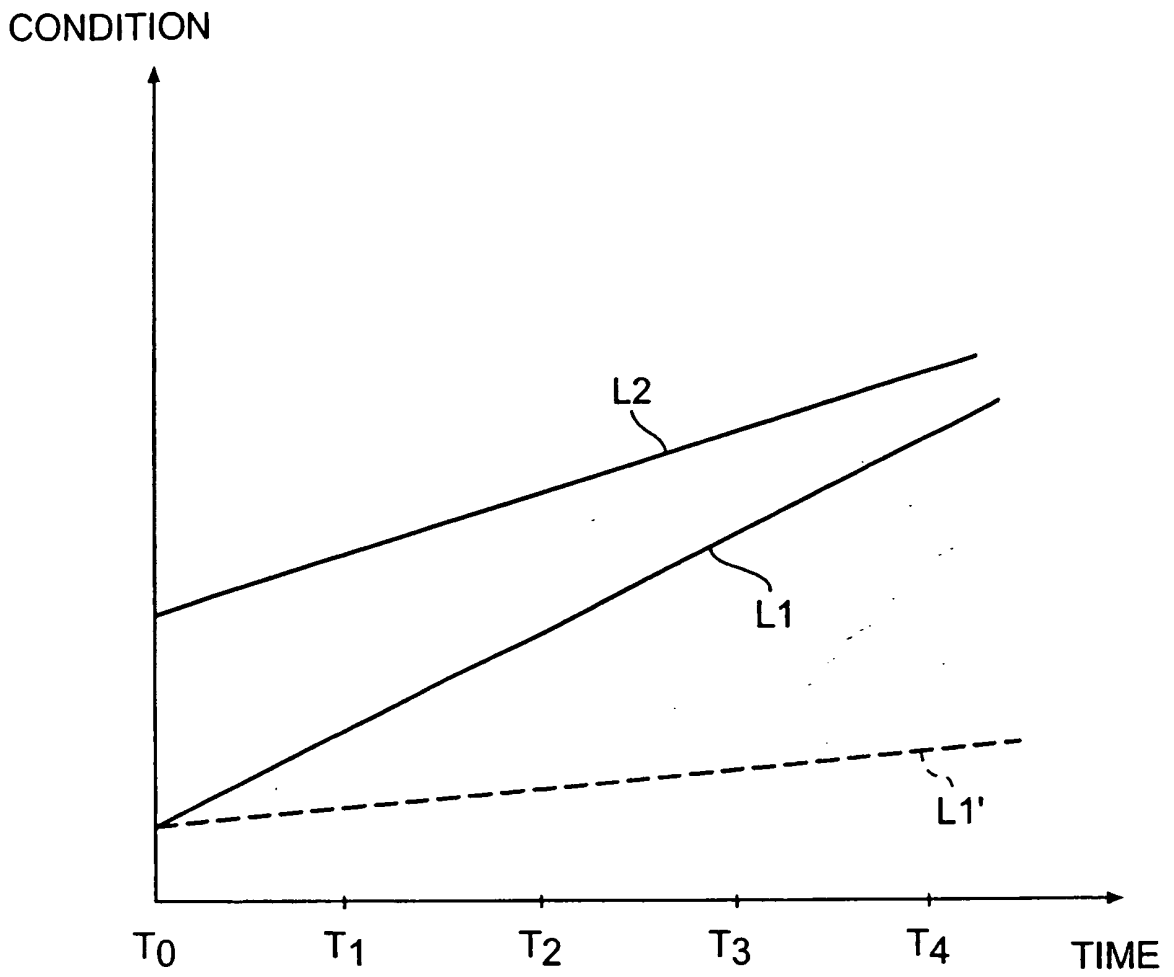
**FIG. 6**



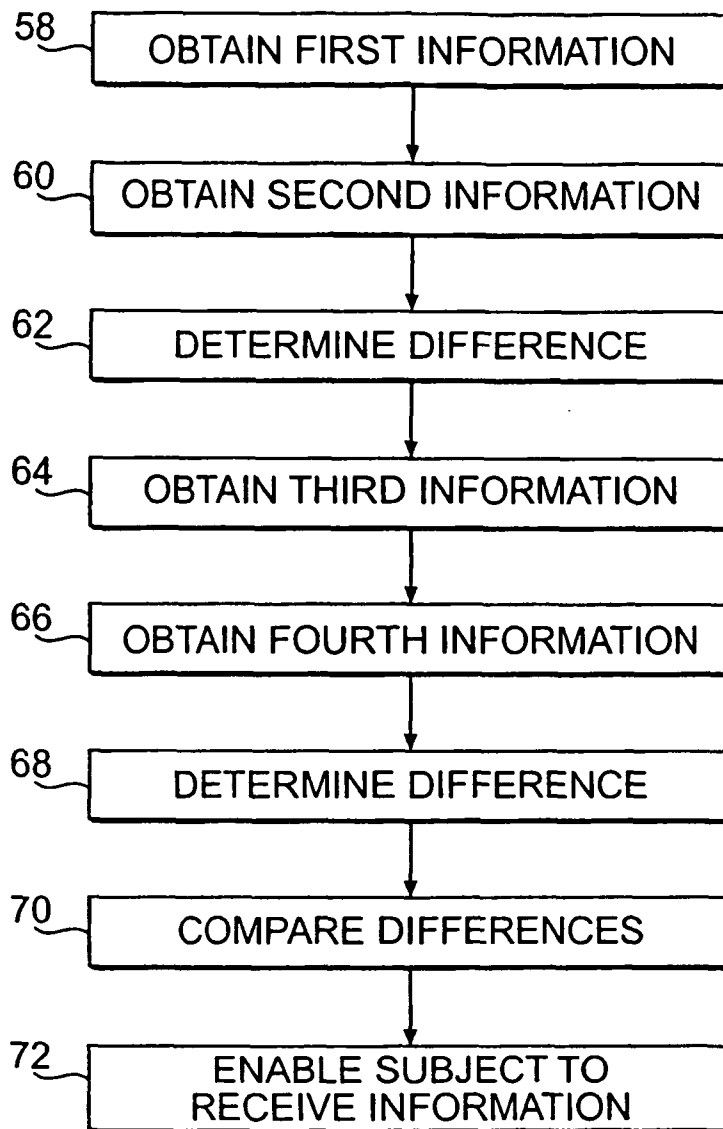
**FIG. 7**



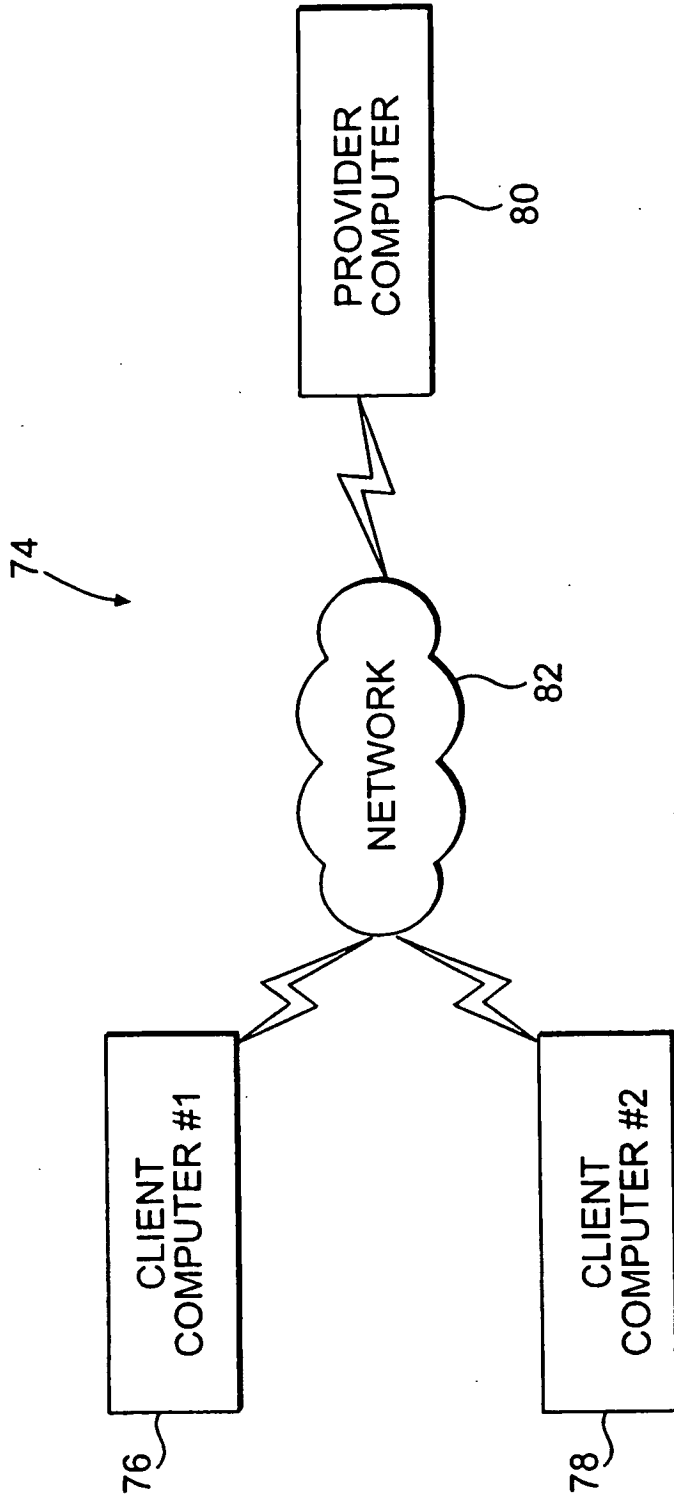
**FIG. 8**



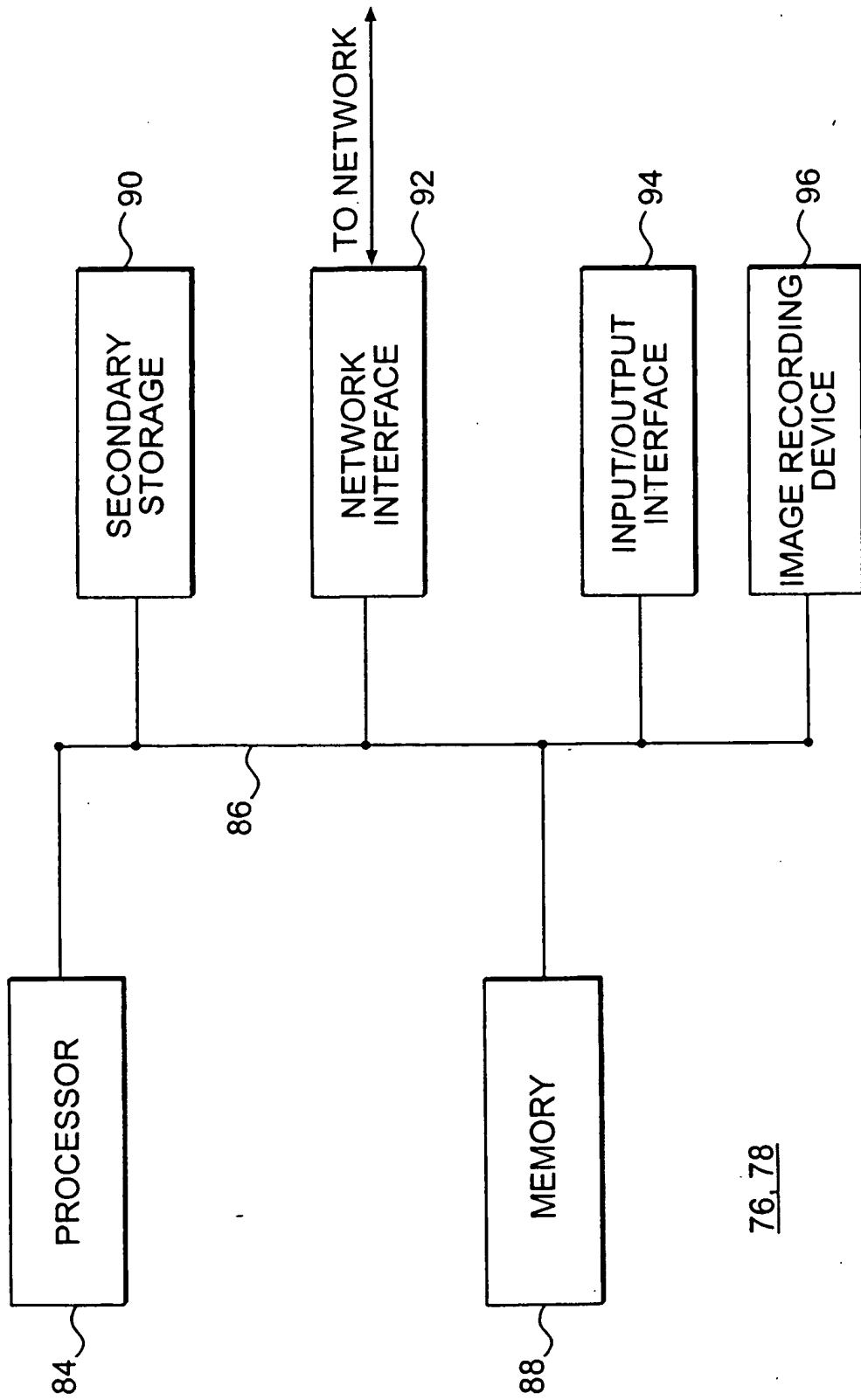
**FIG. 9**



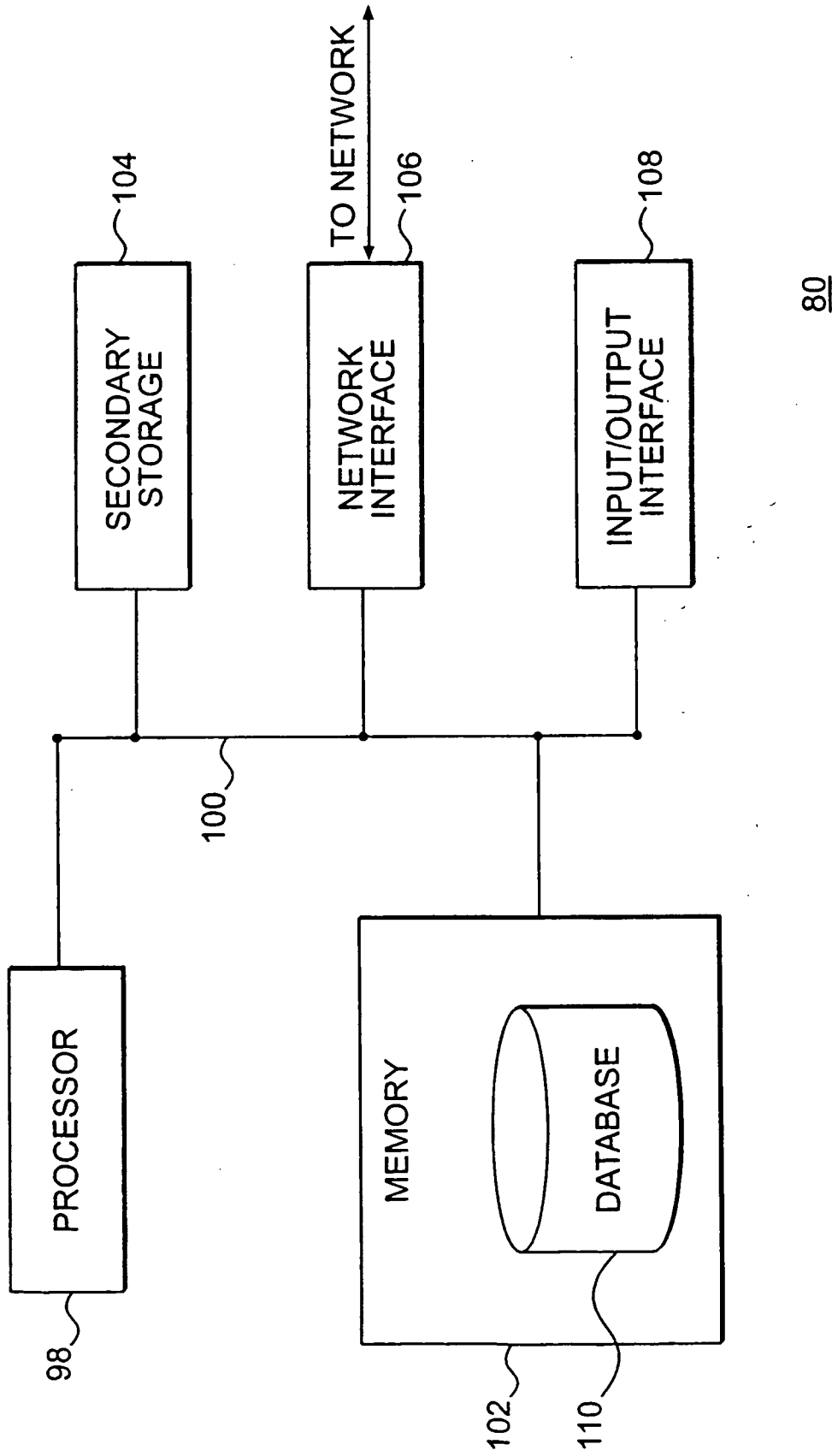
**FIG. 10**



**FIG. 11**



**FIG. 12**



**FIG. 13**

**REFERENCES CITED IN THE DESCRIPTION**

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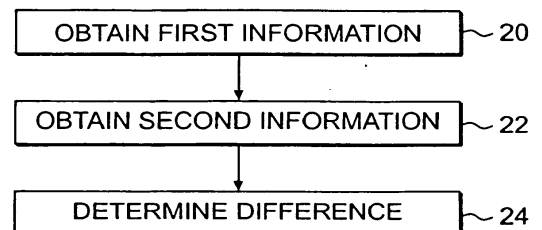
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- US 5640957 A [0002]

专利名称(译)	用于多部位皮肤测试的方法		
公开(公告)号	<a href="#">EP1314395B1</a>	公开(公告)日	2008-06-04
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申请(专利权)人(译)	欧莱雅		
当前申请(专利权)人(译)	欧莱雅		
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IPC分类号	A61B5/103 G01N33/50 A61B5/00 A61B5/107		
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优先权	10/991913 2001-11-26 US		
其他公开文献	EP1314395A3 EP1314395A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

一种能够在考虑至少一个外部身体部分暴露于环境的情况下进行分析的方法包括：获得表示受试者的第一外部身体部分的至少一个状况的第一信息，并获得表示至少一个状况的第二信息。受试者的第二个外部身体部分。该方法还包括确定第一信息和第二信息之间的差异，以便能够考虑至少一个环境因素的影响进行分析。第二外部主体部分通常比第一外部主体部分更少地暴露于至少一个环境因素。



**FIG. 1**