

Skin type analysis based on the new questionnaire in Korean women

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Over the past decades, several terms, including dry, oily, combination and sensitive, have historically been used to characterize skin types. However, these are not based on the evident dermatologic definition, which usually includes subjective and psychological properties. While cosmetic laser procedures are commonly performed in Korean women, the safety profile results frequently differ compared with Western patients. The aim of this study was to establish a new practical questionnaire to classify skin subtypes in Korean women to establish treatment and skin care guidance.

Eight experts from seven university hospitals developed consensus statements about skin types and created a questionnaire that consisted of 11 items (Figure 1). The content was categorized into four major subtypes: dry or non-dry; oily or non-oily; sensitive or non-sensitive; pigmented or non-pigmented. A total of 512 patients aged 20 to 65 years were included and completed the questionnaire. Correlations with age, skin Fitzpatrick's phototypes, and dermatologic comorbidities on the face were analyzed using Chi-square test and Chi-square trend test.

141 of 512 patients (27.5%) were in the third decades of age, the most common group, followed by fourth (27.1%), fifth (21.3%), sixth (15.4%), seventh (2.1%) decade groups and the patients' mean age was 37.4 years. Korean women commonly have oily skin but complain of dryness after cleansing. They are especially sensitive to skin care products and prone to developing pigmentary lesions. Table 1 shows the correlations between age, modified Fitzpatrick's skin phototype and dermatologic comorbidities.

The proportion of dry skin and pigmented skin increased and the proportion of oily skin decreased with advanced age based on Q2, 3, 4, and 10. The proportion of sensitive skin was significantly higher in patients with dermatologic comorbidities, but was not correlated with age and modified Fitzpatrick's skin phototype, overall. The most common associated comorbidity was acne vulgaris(29.7%), followed by rosacea(27.9%), and contact dermatitis(22.5%). The proportion of pigmented skin was higher in darker skin phototypes, based on Q10, and 11.

In conclusion, this is the first questionnaire suggested in Korean patients to classify the skin types. We expect that the results of our study can be a treatment guideline to consider when performing cosmetic procedures for dermatologists and it may provide a basis for using cosmeceuticals to manage numerous skin conditions based on individual skin subtypes.

Figure 1. The new questionnaire for skin type analysis

| Skin type | Questions |
|--------------------------|--|
| Dry /Non-Dry | 1. How do you feel about your skin after cleansing? ① Very tight or cracks ② Somewhat tight ③ Not tight 2. Considering your age, do you find fine wrinkles? (Yes / No) |
| Oily /Non-Oily | 3. 3 hours after applying makeup foundation, how does your face seems like? ① Dry or cracks ② Smooth ③ Greasy ④ Greasy and makeup gets smudged 4. Do you have clogged pores or comedones? ① Rarely ② A little only on the T-zone area ③ A lot on the T zone area and the middle of the face ④ Pores are enlarged in general. |
| Sensitive /Non-Sensitive | 5. Do you often feel itching or burning sensation on your facial skin? (Yes / No) 6. Does your skin often flake? (Yes / No) 7. Have you ever experienced redness, itch, or sting after applying skin care products (including cleanser, moisturizer, toners, and makeup)? (Yes / No) 8. Have you ever got red and flushed on your face by stress, sun exposure, drinking or eating spicy food? (Yes / No) 9. Have you ever been diagnosed with atopic dermatitis, contact dermatitis, rosacea, acne vulgaris or etc.? (Yes / No) diagnosis () |
| Pigmented /Non-Pigmented | 10. Do you have pigmented patches on your face? (Yes / No) 11. Does your skin have the tendency that dark spots remain on the area wounded or exposed to sunlight? (Yes / No) |

Table 1. Associations with age, dermatologic comorbidities, and skin phototype

| * p <0.05 | Dry skin | | Oily skin | | Sensitive skin | | | | | Pigmented skin | |
|-----------------------------|----------|--------|-----------|--------|----------------|--------|---------|---------|----|----------------|--------|
| | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 |
| Age | 0.906 | 0.012* | <0.001* | 0.012* | 0.188 | 0.002* | 0.052 | 0.007* | | 0.004* | 0.238 |
| Dermatologic Cormorbidities | 0.791 | 0.774 | 0.642 | 0.079 | <0.001* | 0.042* | <0.001* | <0.001* | | 0.599 | 0.490 |
| phototype | 0.946 | 0.063 | 0.289 | 0.264 | 0.631 | 0.798 | 0.435 | 0.899 | | 0.002* | 0.001* |