

**Shiseido Newly Elucidates Skin Physiological Characteristics  
of Women in Their 60s or Older  
Older Looking Face than One's Actual Age Caused by Effects of Change in Skin Color and  
Decreased Function of Mimetic Muscles**

Shiseido has conducted new research on the skin physiology of mature woman in their 60s or older to elucidate the causes that make one's face look older than one's actual age. As a result, Shiseido found out for the first time that the effect of blood changing to a dark red color caused by a decrease of the hemoglobin (hereinafter "Hb") saturation Oxygen (O<sub>2</sub>) level\* makes skin look dark, dull and aged in addition to commonly known causes such as age spots and wrinkles. Further, while a lack of facial expression can be a primary factor as well, Shiseido research revealed that the function of facial muscles (mimetic muscles) decreases due to aging, which in turn increases sagging skin and makes it difficult to show the richness and fullness of one's facial expression and smile.

Moreover, Shiseido discovered that "Hawthorn Extract" has the effect of increasing the Hb O<sub>2</sub> saturation level in blood and "Burnet Extract" has the effect of activating muscle cells.

\* Hemoglobin O<sub>2</sub> saturation level: percentage of oxygen bound to hemoglobin in blood. When the percentage is high, blood turns a vivid red, and when it is low, blood turns dark red, both conditions of which are reflected in skin.

**Background of Research and Skin Physiological Characteristics of Women in Their 60s or Older**

Beauty consciousness of mature women in their 60s or older changes with age. For example, they not only want anti-aging treatments for age spots and wrinkles, as is common among many women in their 30s to 50s, but also to improve the impression of the entire face by the beauty of their facial expression. On the other hand, there has not been sufficient study of skin physiology of women in this age range up until now, thus there are very few academic reports regarding this matter.

As the start of its research, Shiseido focused on the fact that "even though women are the same age, some individuals' faces look older while others do not." Skin changes with age and the degree of change due to aging varies among individuals. Consequently, Shiseido carried out visual assessment, various skin measurements and integrative analysis of 130 females in their 60s and 70s to find out what causes one's face to look older than one's actual age. As a result, the following characteristics were revealed in addition to commonly known causes such as an increase of age spots and wrinkles.

**Characteristic 1: Decrease of Hb O<sub>2</sub> saturation level**

Results of skin measurements indicated that the skin's luminance and transparency levels tend to be lower and the Hb saturation level is significantly decreased for individuals whose face looks older than their actual age compared with those whose facial appearance is consistent with age. Hb, which is a protein contained in red blood cells, transports oxygen throughout the body. When saturated with oxygen taken up from lungs, Hb turns bright red. Oxygen is gradually released from the skin capillaries, however, thereby decreasing the Hb saturation level and turning the blood dark red. While Shiseido had previously discovered that the Hb saturation level decreases as postmenopausal women get older, research conducted at this time verified the relationship between the difference of the Hb saturation level and impression of age. Results showed that a decrease of the Hb saturation level in turn reduces the skin's luminance and transparency levels and causes dark and dull skin color, causing one's face to look older.

### Characteristic 2: Decreased function of mimetic muscles

Sagging skin is one of the causes that make the face look older. Until now, it has been known that sagging skin is caused by a decrease of skin functions. Research at this time confirmed through the measurement of muscular strength of mimetic muscles that the function of mimetic muscles diminishes due to aging, whereby the mimetic muscles are not able to support surrounding tissues, which droop, and thus sagging skin occurs.

In addition, Shiseido studied the difference of impression due to facial expression of females in their 60s or older and found that “a smile makes skin look young and beautiful.” Shiseido also discovered, however, that when the function of muscles controlling facial expression diminishes due to aging, mimetic muscles do not work as they should, and therefore it is hard to make a smile. The resulting lack of facial expression also gives the impression that the entire face looks older than one’s actual age.

### **“Hawthorn Extract” Increases Hb Saturation Level**

As a result of conducting a search for ingredients which increase the Hb saturation level, Shiseido confirmed the effects of “Hawthorn Extract,” a flower extract of Hawthorn, a deciduous shrub or small tree found from Europe to the northern part of Africa. Hawthorn has been known as an herb used as a mild sedative in Europe since a long time ago. As a result of its discovery, the extract is expected to improve dullness of skin and make skin color healthy.

### **“Burnet Extract” Activates Mimetic Muscle Cells**

In carrying out a search with a culture system using muscle cells for approximately 200 promising herbal medicines having muscle cell activatory effects in preventing the weakening of mimetic muscles, Shiseido confirmed the effects of “Burnet Extract.” Burnet is a plant belonging to the rose family that is widely found from Europe to East Asia, and its medicinal effects on stopping bleeding and treating burns and bruises and contusions have been known from long ago. The effect of “Burnet Extract,” a rhizome extract, is expected to prevent decreased function of mimetic muscles and improve sagging skin. Moreover, the effect is expected to contribute to richness and fullness of facial expression and make it easy to smile, which makes skin look young and beautiful.