

Ideals of Facial Beauty



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PRACTICE POINTS

- Canons of ideal facial dimensions have existed since antiquity and remain relevant in modern times.
- Horizontal and vertical anatomical ratios can provide a useful framework for cosmetic interventions.
- To maximize aesthetic results, alterations to individual cosmetic units should be made with thoughtful consideration of overall facial harmony.

Facial aesthetic procedures are central to cosmetic dermatology. Success depends not only on improving individual structures but also on establishing facial harmony. Several canons of aesthetic dimensions have been described, and these concepts can provide a useful basis for procedural planning. Here, we review aesthetic facial measurements and proportions as well as the variations that may occur in different ethnic groups and the changes that develop with age.

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Several concepts of ideal aesthetic measurements can be traced back to ancient Greek and European Renaissance art. In examining canons of beauty, these classical ideals often are compared to modern-day standards, allowing clinicians to delineate the parameters of an attractive facial appearance and facilitate the planning of cosmetic procedures.

Given the growing number of available cosmetic interventions, dermatologists have a powerful ability to modify facial proportions; however, changes to individual structures should be made with a mindful approach to improving overall facial harmony. This article reviews the established parameters of facial beauty to assist the clinician in enhancing cosmetic outcomes.

Canons of Facial Aesthetics

Horizontal Thirds—In his writings on human anatomy, Leonardo da Vinci described dividing the face into equal thirds (Figure 1). The upper third measures from the

trichion (the midline point of the normal hairline) to the glabella (the smooth prominence between the eyebrows). The middle third measures from the glabella to the subnasale (the midline point where the nasal septum meets the upper lip). The lower third measures from the subnasale to the menton (the most inferior point of the chin).¹

Although the validity of the canon is intended to apply across race and gender, these proportions may vary by ethnicity (Table). In white individuals, the middle third of the face tends to be shorter than the upper and lower thirds.² This same relationship has been observed in black males.³ In Chinese females, the upper third commonly is shorter than the middle and lower thirds, correlating with a less prominent forehead. In contrast, black females tend to have a relatively longer upper third.⁴

The relationship between modern perceptions of attractiveness and the neoclassical norm of equal thirds remains a topic of interest. Milutinovic et al¹ examined facial thirds in white female celebrities from beauty and fashion magazines and compared them to a group of anonymous white females from the general population. The group of anonymous females showed statistically significant ($P<.05$) differences between the sizes of the 3 facial segments, whereas the group of celebrity faces demonstrated uniformity between the facial thirds.¹

Ethnic and Gender Variations in Horizontal Thirds

Ethnicity/ Gender	Observed Divergences From Equal Horizontal Thirds
White males, white females, black males	Decreased glabella-subnasale distance
Black females	Increased trichion-glabella distance
Chinese females	Decreased trichion-glabella distance

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The lower face can itself be divided into thirds, with the upper third measured from the subnasale to the stomion (the midline point of the oral fissure when the lips are closed), and the lower two-thirds measured from the stomion to the menton (Figure 1). Mommaerts and Moerenhout⁵ examined photographs of 105 attractive celebrity faces and compared their proportions to those of classical sculptures of gods and goddesses (antique faces). The authors identified an upper one-third to lower two-thirds ratio of 69.8% in celebrity females and 69.1% in celebrity males; these ratios were not significantly different from the 72.4% seen in antique females and 73.1% in antique males. The authors concluded that a 30% upper lip to 70% lower lip-chin proportion may be the most appropriate to describe contemporary standards.⁵

Vertical Fifths—In the vertical dimension, the neoclassical canon of facial proportions divides the face into equal fifths (Figure 2).⁶ The 2 most lateral fifths are measured from the lateral helix of each ear to the exocanthus of each eye. The eye fissure lengths (measured between the endocanthion and exocanthion of each eye) represent one-fifth. The middle fifth is measured between the medial canthi of both eyes (endocanthion to endocanthion). This distance is equal to the width of the nose, as measured between both alae. Finally, the width of the mouth represents 1.5-times the width of the nose. These ratios of the vertical fifths apply to both males and females.⁶

Anthropometric studies have examined deviations from the neoclassical canon according to ethnicity.

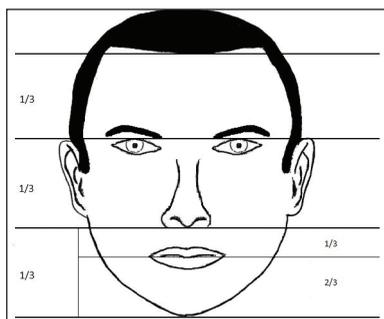


FIGURE 1. A male face divided into equal horizontal thirds.

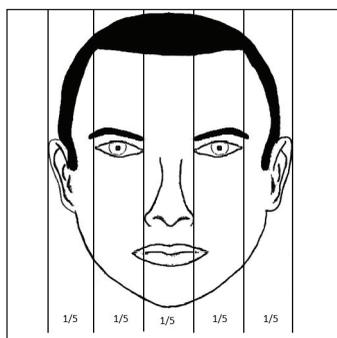


FIGURE 2. A male face divided into equal vertical fifths.

Wang et al⁷ compared the measurements of North American white and Han Chinese patients to these standards. White patients demonstrated a greater ratio of mouth width to nose width relative to the canon. In contrast, Han Chinese patients demonstrated a relatively wider nose and narrower mouth.⁷

In black individuals, it has been observed that the dimensions of most facial segments correspond to the neoclassical standards; however, nose width is relatively wider in black individuals relative to the canon as well as relative to white individuals.⁸

Milutinovic et al¹ also compared vertical fifths between white celebrities and anonymous females. In the anonymous female group, statistically significant ($P < .05$) variations were found between the sizes of the different facial components. In contrast, the celebrity female group showed balance between the widths of vertical fifths.¹

Lips—In the lower facial third, the lips represent a key element of attractiveness. Recently, lip augmentation, aimed at creating fuller and plumper lips, has dominated the popular culture and social media landscape.⁹ Although the aesthetic ideal of lips continues to evolve over time, recent studies have aimed at quantifying modern notions of attractive lip appearance.

Popenko et al¹⁰ examined lip measurements using computer-generated images of white women with different variations of lip sizes and lower face proportions. Computer-generated faces were graded on attractiveness by more than 400 individuals from focus groups. An upper lip to lower lip ratio of 1:2 was judged to be the most attractive, while a ratio of 2:1 was judged to be the least attractive. Results also showed that the surface area of the most attractive lips comprised roughly 10% of the lower third of the face.¹⁰

Penna et al¹¹ analyzed various parameters of the lips and lower facial third using photographs of 176 white males and females that were judged on attractiveness by 250 volunteer evaluators. Faces were graded on a scale from 1 (absolutely attractive) to 7 (absolutely unattractive). Attractive males and females (grades 1 and 2) both demonstrated an average ratio of upper vermilion height to nose-mouth distance (measured from the subnasalae to the lower edge of the upper vermilion border) of 0.28, which was significantly greater than the average ratio observed in less attractive individuals (grades 6 or 7) ($P < .05$). In addition, attractive males and females demonstrated a ratio of upper vermilion height to nose-chin distance (measured from the subnasalae to the menton) of 0.09, which again was larger than the average ratio seen in less attractive individuals. Figure 3 demonstrates an aesthetic ideal of the lips derived from these 2 studies, though consideration should be given to the fact that these studies were based in white populations.

Golden Ratio—The golden ratio, also known as Phi, can be observed in nature, art, and architecture. Approximately equal to 1.618, the golden ratio also has been identified as a possible marker of beauty in the human face and has garnered attention in the lay press. The ratio has been applied to several proportions and structures in the face, such as the

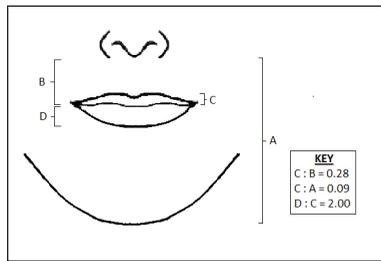


FIGURE 3. Female lips exhibiting a lower lip to upper lip ratio (D:C) of 2.00, upper vermilion height to mouth-nose distance ratio (C:B) of 0.28, and upper vermilion height to chin-nose distance ratio (C:A) of 0.09.

ratio of mouth width to nose width or the ratio of tooth height to tooth width, with investigation providing varying levels of validation about whether these ratios truly correlate with perceptions of beauty.¹² Swift and Remington¹³ advocated for application of the golden ratio toward a comprehensive set of facial proportions. Marquardt¹⁴ used the golden ratio to create a 3-dimensional representation of an idealized face, known as the golden decagon mask. Although the golden ratio and the golden decagon mask have been proposed as analytic tools, their utility in clinical practice may be limited. Firstly, due to its popularity in the lay press, the golden ratio has been inconsistently applied to a wide range of facial ratios, which may undermine confidence in its representation as truth rather than coincidence. Secondly, although some authors have found validity of the golden decagon mask in representing unified ratios of attractiveness, others have asserted that it characterizes a masculinized white female and fails to account for ethnic differences.¹⁵⁻¹⁹

Age-Related Changes

In addition to the facial proportions guided by genetics, several changes occur with increased age. Over the course of a lifetime, predictable patterns emerge in the dimensions of the skin, soft tissue, and bone. These alterations in structural proportions may ultimately lead to an unevenness in facial aesthetics.

In skeletal structure, gradual bone resorption and expansion causes a reduction in facial height as well as an increase in facial width and depth.²⁰ Fat atrophy and hypertrophy affect soft tissue proportions, visualized as hollowing at the temples, cheeks, and around the eyes, along with fullness in the submental region and jowls.²¹ Finally, decreases in skin elasticity and collagen exacerbate the appearance of rhytides and sagging. In older patients who desire a more youthful appearance, various applications of dermal fillers, fat grafting, liposuction, and skin tightening techniques can help to mitigate these changes.

Conclusion

Improving facial aesthetics relies on an understanding of the norms of facial proportions. Although cosmetic interventions commonly are advertised or described based on a single anatomical unit, it is important to appreciate

the relationships between facial structures. Most notably, clinicians should be mindful of facial ratios when considering the introduction of filler materials or implants. Augmentation procedures at the temples, zygomatic arch, jaw, chin, and lips all have the possibility to alter facial ratios. Changes should therefore be considered in the context of improving overall facial harmony, with the clinician remaining cognizant of the ideal vertical and horizontal divisions of the face. Understanding such concepts and communicating them to patients can help in appropriately addressing all target areas, thereby leading to greater patient satisfaction.

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