

# Facial aspect ratio and the split face photo

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The aspect ratio of an image describes the proportional relationship between its width and height. As hair and its contributing height is lost in the hairline and frontal scalp, the aspect ratio of the face is altered making it appear shorter and wider, changing the picture of the human face as viewed by others. Hair transplants, when done correctly, allow patients to regain their facial aspect ratio, making it appear taller and thinner. Split face photos show the positive change in facial aspect ratio that properly performed hair transplants can achieve.

The aspect ratio is commonly expressed as two numbers separated by a colon, as in 16:9, for an x:y aspect ratio, no matter how big or small the image is. If the width is divided into x units of length and the height is measured using this same length unit, the height will be measured to be y units. Two common video graphic aspect ratios are 4:3, the universal video format of the 20th century, and 16:9, universal for high-definition television and European digital television (Figure 1).<sup>1</sup> A 4:3 aspect ratio means that for every 4 inches of width in an image, you will have 3 inches of height. In mathematical terms, that comes out to the screen being 33% wider than it is high. A 16:9 aspect ratio means that for every 16 inches of width in an image, you will have 9 inches of height. Unlike the 4:3 aspect ratio, a 16:9 aspect ratio is 78% wider than high.



Figure 1. Two aspect ratios compared using the same diagonal size: photo on the right, 4:3 aspect ratio; photo on the left, 16:9 aspect ratio.

When viewed from the front, the human face, and its impression on the viewer, is shaped by the anatomical position of its components. The eyes, ears, nose, and mouth vary little in location from person to person giving the viewer a predictable picture of the human face. If one or both eyes or ears or the nose or mouth is substantially altered or absent, the result is often considered grotesque. The position of the hairline and its relationship to other anatomical features varies from person to person more than the other facial features mentioned above.

When part or the entire hairline is lost, it is considered a natural change due to aging. What actually occurs is that with loss of hair in the horizontal hairline and vertical temporal lines, the shape of the human face undergoes a progression of changes. More flat skin is visible as the hairline moves superiorly and the temporal lines move posteriorly, an “unzipping” of the frontal temporal angle (Figure 2). This makes the face appear wider while loss of the height of hair growing in the hairline makes the face appear shorter (Figures 3 and 4). This changes the aspect ratio of the face, the relationship between its width and height.

When the hairline is absent, the superior shape of the face is the flat skin in the shape of the round curvature of the skull (Figure 5). There is no border between forehead and scalp. Subjects who have totally lost their hairline lose a portion of their individuality as

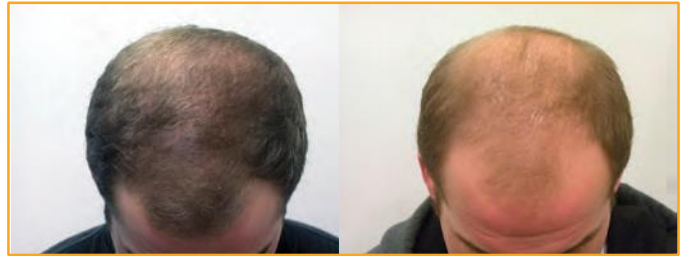


Figure 2. Unzipping of frontal temporal triangle—superior movement of hairline with posterior movement of temporal line.

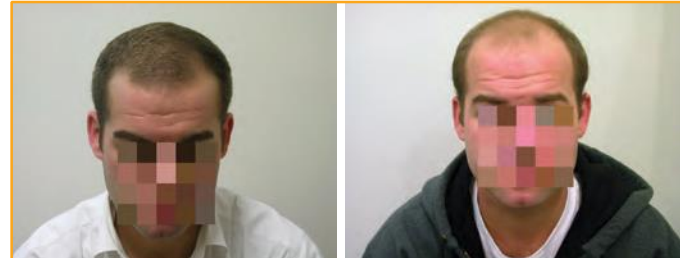


Figure 3. Hair loss makes face appear shorter and wider, changing the aspect ratio.

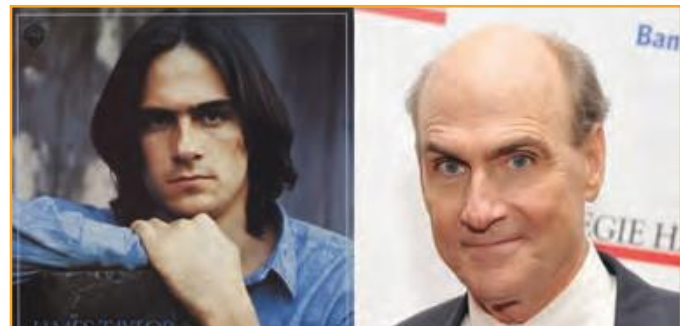


Figure 4. Hair loss makes face appear shorter and wider, changing the aspect ratio.

everyone with no hairline and loss of hair in the frontal aspect have a similar facial shape; all that is seen is the skin covering the rounded skull without hair (Figure 6). Individuality can be regained by restoring the facial aspect ratio of the face with properly placed and angled hair transplants.

The face is framed by the mandible inferiorly, the sideburns and temporal lines laterally, and the hairline superiorly. With loss



Figure 5. Hairline replaced with flat skin in the shape of the round curvature of the skull.



Figure 6. Loss of individuality with loss of hairline and hair.

of the hairline, the top of that frame disappears. When talking to another person face-to-face, patients often note that after loss of their hairline, there is less eye-to-eye contact as the eye of the facing person tends to drift superiorly unstopped by a hairline. The natural restoration of that line keeps the eye from drifting, centering the focus back on the subject's eyes. The eyes will concentrate on the hairline if it is restored unnaturally by being positioned too low or too high or by using grafts that are too big, improperly angled, or improperly spaced. This is a common fear of many prospective patients.

A split face photo refers to juxtaposing the before image of one half of the face against an after photo of the contralateral half of the face in one combined image. When the face is split, and the halves of the face juxtaposed, the before and after changes become dramatic due to this juxtaposition (Figure 7). While traditional before and after photos show the changes seen after hair transplants (Figure 8), the split

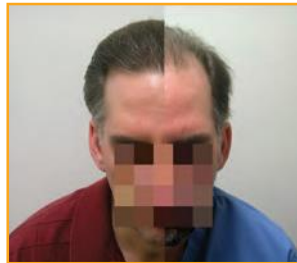


Figure 7. Split face photo shows hairline and frontal aspect transplanted, frontal temporal triangle re-zipped, facial height and width restored. Patient had 4,000 grafts transplanted in 2 sessions.



Figure 8. Traditional before (left) and after (right) photos.

face photo shows the change in aspect ratio more closely (Figure 9). Split face photos are difficult to compose. Before and after photos must be taken with one camera, in the same room, with the same position and lighting. When the individual before and after photos are taken, the position of the patient and angles of the images must be similar for the combined image to look proportional. I know of no specific computer program to make the photos match perfectly with respect to size and orientation. We have used Photoshop to manually manipulate and size the photos to make the two halves match.

In conclusion, as hair and its contributing height are lost in the hairline and frontal scalp, the face appears shorter and wider as the aspect ratio of the face is changed. This alters the picture of the human face as viewed by others. Adding lost hair to a patient's hairline and frontal scalp using hair transplants restores the facial aspect ratio. Split face photos can give prospective patients an idea of the acute changes in general appearance and specific and positive change in facial aspect ratio that properly performed hair transplants can achieve. The face appears taller and thinner by re-creating the hairline, by restoring hair height, and by re-creating the prior facial aspect ratio.



Figure 9. Split face photo shows the change in aspect ratio more closely (before (right) and after (left)).

**Reference**

1. Wikipedia contributors. "Aspect ratio (image)." Wikipedia, The Free Encyclopedia. *Wikipedia*, The Free Encyclopedia, 7 October 2013. Web. 10 Oct. 2013. ♦




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