In Neuromuscular Dentistry, it is the hope of the treating doctor to reposition the upper jaw and the lower jaw to their esthetically and physiologically ideal position via functional orthodontics and/or major oral rehabilitation. To this end, it is important for us health care professionals to understand and define facial beauty.

This is the Jefferson philosophy of facial beauty:
1. Divine proportion is beauty. Divinely proportioned face and body are beautiful and healthy.
2. There is a universal standard for facial beauty regardless of race, age, sex, and other variables.
3. Universal standard is based on divine proportion, and divine proportion is universal and synonymous with beauty.
4. All living organisms, including humans, are genetically engineered to develop and conform to the divine proportion.
5. Facial and body disproportion/abnormalities are predominantly due to environmental factors and significantly less to genetics.
6. The following biologic equation holds true for all humans regardless of race, age, sex, and other variables:

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\text{Divine proportion} = \text{facial beauty} = \text{TMJ health} = \text{physiologic harmony} = \text{fertility} = \text{Total Health and Wellness} = \text{Quality of Life}\]

There is no greater example of illustrating divine proportion of the human body than Leonardo DaVinci’s drawing, Human Figure in a Circle, Illustrating Proportions, 1485-90. See Figure 1.

Figure 1 illustrates the human body in perfect proportion. If the distance from the top of the head to the umbilicus is 1, then the distance from the umbilicus to the bottom of the foot is 1.618. Also, if the distance from the right shoulder to the tip of the left finger is 1, then the total height of the human body (head to toe) is 1.618. Divinely proportioned individuals, both males and females, are attractive and tend to be strong, physiologically healthy, and fertile. It would be interesting to study the proportions of Olympic athletes compared to the general population.
Adult human face must conform to the divine proportion in order for it to be beautiful and healthy. Figure 3 shows some vertical relationship of the face. For example, if the distance from LL (lateral corner of the lip) and ME (soft tissue menton, bottom of the chin) is 1, then the distance from LL to LC (lateral canthus of the eye) should be 1.618. If the distance from LN (lateral side of the nose) to ME (soft tissue menton) is 1, then the distance from LN to TRI (Trichion-beginning of forehead wrinkling when one lifts the eyebrow) is 1.618.

Figure 4 shows a few transverse proportion of the face that must conform to the divine proportion to be esthetically ideal. For example, if the distance between LN (lateral border of the nose) is 1, then the distance between LL (lateral border of the lips) is 1.618. The distance between LC (lateral border of the canthus) is $(1.618)^2$, and the distance between LT (lateral border of the temple) is $(1.618)^3$.

Fig. 3, vertical proportion of the face.  
Fig. 4, transverse proportion of the face.

Fig. 5, outside dimension of the face.  
Fig. 6, beautiful model's face.  
Photo by Francesca Sorrenti. Permission by Mademoiselle Magazine.
Dr. Jefferson was intrigued by the thought that an ideally proportioned face would also have an outside dimension that conforms to the divine proportion. He reasoned that if the widest part of the face, LCh (lateral border of the cheek) is 1, then TH (top of the head) to ME (soft tissue menton, bottom of the chin) should be 1.618. If it was shorter than 1.618, the face would be short, and if it was longer than 1.618, the face would be long. See Figure 5.

He was able to test this hypothesis by finding a photograph in a magazine of a female model with a beautifully proportioned face. The face was facing straight on and she was bald so that he was able to measure the top of her head to her soft tissue menton. See Figure 6. As predicted, her facial width to her facial height was very close to 1 to 1.618.

Figure 7 shows short face, long face, and ideal face. Note that faces that do not conform to the divine proportion have esthetic and physiologic problems. Long faces tend to have nasal obstruction and breathing problems. Short faces tend to have temporomandibular disorder and headaches. Ideally proportioned faces tend to have minimal physiologic problems.

Fig. 7, long face, short face, and ideal face.

In order for facial profile to be beautiful, it must also conform to the divine proportion. Figure 8 shows various types of facial profiles that can be seen in the general population. However, of all the attendees who took Dr. Jefferson's seminars in the United States and
around the world, almost 100% selected one profile as being the most beautiful, and that was profile F. Profile F conforms to divine proportion. Profile F is not only beautiful, but physiologically healthy.

Fig. 8 shows the various types of facial profiles seen in the general population. Only one is beautiful.

Two websites that explain the correlation of divine proportion to beautiful profile are [www.goldennumber.net/face.htm](http://www.goldennumber.net/face.htm) by Gary Meisner and [www.beautyanalysis.com](http://www.beautyanalysis.com) by Stephen Marquardt. See Figures 9 and 10.

Dr. Jefferson developed the Jefferson Cephalometric analysis which is a modified and abbreviated version of the Sassouni Archial Analysis to help assess upper and lower jaw
position. This analysis helps to assess the antero-posterior position of individual's upper and lower jaws, and to assess whether the face is normal, too short, or too long. A lateral head x-ray is taken, and then certain facial-skeletal landmark is traced over an overlay. Figures 11 and 12 are shown to explain how to interpret the Jefferson Cephalometric analysis.

Fig. 11, patient profile.  
Fig. 12, patient's cephalometric analysis taken from her head x-ray.

Figure 11 shows a 21 year old female with an attractive facial profile. A lateral head x-ray was taken. An overlay was placed on top of her lateral head x-ray, and certain facial-skeletal landmarks were traced. The position of the upper jaw (maxilla) is based on the anterior tip, anterior nasal spine (ANS). The position of the anterior position of the lower jaw (mandible) is based on pogonion (P) and the lowermost position of the chin bone, menton (M).

To interpret whether her upper and lower jaw are in normal position or not, based on the Jefferson Cephalometric analysis, please refer to Figure 12. In all individuals no matter what age, the anterior tip of the maxilla, ANS, and the anterior portion of the chin bone, P, should be within 2 mm of the Anterior arc in order to be normal and ideal. At age 4, the bottom of the chin bone, M, should be within 2 mm of the Age 4 vertical arc, and at age 18 and older, the bottom of the chin bone, M, should be within 2 mm of the Age 18 vertical arc. From age 4 to 18, the bottom of the chin bone should be between the Age 4 and Age 18 vertical arcs. Based on the Jefferson Cephalometric analysis, the individual in Figure 11 has ideal upper and lower jaw position, and her face is neither too short nor too long.

This individual has a normal profile designated as Skeletal I, normal antero-posterior position of the upper and lower jaw. Individual that has a Skeletal II will have the upper jaw too far forward of the lower jaw, and individual that has a Skeletal III will have the lower jaw too far forward of the upper jaw. A brief explanation of the Jefferson Cephalometric analysis and Skeletal Classification--Skeletal I, Skeletal II, and Skeletal III-- is given so that in discussing
cases that Dr. Jefferson has personally treated, the readers will see how he was able to harmonize the jaw position and to beautify facial appearance.

**Case I.** Figures 13a and 13b show a child with a skeletal III profile. The Jefferson Cephalometric analysis shows that the upper jaw is behind the Anterior arc, and the lower jaw ahead of the Anterior arc. Dr. Jefferson was able to treat her with one orthodontic appliance.

Fig. 13a, child, skeletal III profile.  
Fig. 13b, Ceph analysis shows Skeletal III.

Figures 14a and 14b show post treatment facial profile and ceph tracing. Her upper and lower jaw is in ideal position to Skeletal I. Her face is normal, neither long or short.

Fig. 14a, post treatment, ideal profile.  
Fig. 14b, Ceph analysis shows Skeletal I, Normal
Case 2. Figures 15a and 15b shows a patient with a Skeletal II profile. The Jefferson Cephalometric analysis shows that the upper jaw is in correct antero-posterior position and the lower jaw is too far back behind the Anterior arc, giving this patient a small, weak looking chin. Also, patient is vertically short.

Figure 16a and 16b show post treatment facial profile and ceph tracing. Although the mandible was not repositioned fully forward, the patient’s vertical was repositioned to normal. Facial profile was improved.