



Facial Asymmetry in Orthodontics

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Editorial Article

Symmetry may be defined as “equality or correspondence in form of parts distributed around a centre or an axis, at the two extremes or poles or on the two opposite sides of the body.” Clinically, symmetry can be taken as balance and significant asymmetry means imbalance. Humans, like most other animals, are considered to display bilateral symmetry. By strict definition, this implies that mirror image mathematical identity exists between right and left halves. Because of biological imperfection, some of which is inherent in the developmental process and some of which is caused by environmental disturbance, such symmetry is never encountered. Therefore, asymmetry within reasonable bounds cannot be considered an abnormal condition. However, what is considered to be within reasonable bounds is largely the result of subjective opinion because accepted objective standards do not exist by which a judgement of abnormality can be made.

Symmetry is both a conceptual and a perceptual notion associated with beauty-related judgments, even as it implies different things in a range of scholarly areas. In general, mammals have marked asymmetry as to the placement of viscera in the oral cavity. Man frequently experiences functional as well as morphologic asymmetry (e.g., right and left handedness as well as a preference for one eye or one leg). According to Dorland’s medical dictionary symmetry is defined as: - “the similar arrangement in form and relationships of parts around a common axis or on each side of a plane of the body.”

Facial asymmetries are imbalances that occur between homologous parts of the face affecting the proportion of these parts to one another with regards to size, form and position on opposite sides of the plane, line or point. Asymmetries exist in orthodontics as well as non-orthodontic individuals. Asymmetry is characterized by a shift of the midline, a difference in facial

height between sides, a difference in facial width between sides or a combination of two or more of these features.

Facial asymmetry, being a common phenomenon, was probably first observed by the artists of early Greek statuary who recorded what they found in nature – normal facial asymmetry. This may be the result of discrepancies either in the form of individual bones or a malposition of one or more bones in the craniofacial complex. The symmetry may also be limited to the overlying soft tissues. Macgregor defined disability as any condition which prevents one from performing the normal activities of daily living. Yet the inability of the facially disfigured to lead normal lives tends to be overlooked because they are ostensibly able-bodied, can work, and can physically accomplish the basic routines of daily living. Peck and Peck evaluated bilateral facial symmetry in 52 “exceptionally well-balanced” white adults and observed that there is less asymmetry and more dimensional stability as the cranium is approached. Significant facial asymmetry causes both functional as well as aesthetic problems. When patient complains of facial asymmetry, the underlying cause should be investigated.

Woo evaluated ancient Egyptian skulls and found that the bones of the cranium showed asymmetry with the right frontal, temporal and parietal bones being larger. The contra lateral side of the facial complex exhibited an asymmetry with the left zygoma and maxilla being larger. Along with the clinical assessment, the radiographic techniques most used for evaluation of facial asymmetries is frontal cephalograms, among other radiographs. The frontal or postero-anterior cephalograms has advantage of positioning the subject in a fixation device thereby allowing image reproduction of high accuracy.

Received date: 01 September 2020; **Accepted date:** 03 September 2020; **Published date:** 04 September 2020

Citation: Kulshrestha R (2020). Facial Asymmetry in Orthodontics. SunText Rev Dental Sci 1(1): 104.

DOI: <https://doi.org/10.51737/2766-4996.2020.004>

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Some clefts of the lip or palate are genetically influenced and result in a facial deformity with an associated collapse of the maxillary dental arch. Intrauterine pressure during pregnancy and significant pressure at the birth canal during parturition can have observable effects on the bones of the fetal skull. The moulding of the parietal and facial bones from these pressures can result in facial asymmetry. In a detailed study of the asymmetry in the dental arches and face, Lundstrom explained that asymmetry can be genetic or non-genetic in origin and that it is usually a combination of both. According to Lundstrom asymmetry can also be described as either qualitative (all or none) or quantitative. As Leo Tolstoy said in *Childhood*, "I am convinced that nothing has so marked influence on the direction of a man's mind as his appearance, and not his appearance itself so much as his conviction that it is attractive or unattractive." Till early 1900's it was a fact that of all the concerns within the field of physical disability & rehabilitation, the large group of persons in the society with facial deviations, i.e., disfigurement or malformations, were seldom included. In this respect they were the marginal or forgotten people. As facial asymmetry could be a social handicap, there is even evidence of discrimination because of facial appearance. When F. C. Macgregor began his research on the psychological & sociological aspects of facial deformity, in searching the literature he was surprised to discover that, in all the studies there was practically no mention of the face.

In 1953 a compilation by Barker and others contained but two references on facial deformities under the rubric "cosmetic". In campaigns for the handicapped either to raise funds or to encourage their employment, the focus is on amputees, paraplegics, the blind, the deaf, those with cerebral palsy, and so on. The victims of such disabilities may even be seen or interviewed on television but never a person with a facial disfigurement. Even at most national and international conferences on disability or rehabilitation, facial disfigurement as a category is omitted. The more Macgregor pursued his investigations of patients with marred faces, repulsive to look at, or whose malformations, though less severe, were stimuli for jokes or ridicule, the more this large group was omitted. As he interviewed and followed patients in need of plastic surgery, prosthetic devices, and orthodontic work, it became abundantly clear that defects of the face can be one of the most tragic handicaps a person can have. It is quite true that unless there is some functional problem, the physical ability of the facially disfigured is not impaired. His handicap is social and psychological.

It is enough to say that the role of the face in our interactions with others is the curse of the problem for anyone whose face deviates from the norm coupled with our cultural emphasis on external appearance, physical attractiveness and conformity, the problems of the facially handicapped lie squarely in the area of mental

health. One might suppose that the psychic distress caused by disfigurement is in direct proportion to its severity. But this is not the case. In an interdisciplinary study of facially disfigured patients conducted at New York University College of Medicine (1949-1952) it was found that for those whose deformities evoked ridicule, stimulated jokes, and were sources of amusement, the psychological impact was exceedingly great. In fact, it was found that many patients with such deviations were in worse psychological shape, had more behavioural disorders, and were more maladjusted than those with the kinds of deformities that were distressing to look at or tended to elicit strong emotional reactions such as pity or revulsion.

The impact of a physical defect on an individual also will be strongly influenced by that person's self-esteem. The result is that the same degree of anatomic abnormality can be merely a condition of no great consequence to one individual but a genuinely severe problem to another. It seems to be easier to cope with a defect if other people's responses to it are consistent rather than if they are not. Unpredictable responses produce anxiety and can have strong deleterious effects. It seems clear that the major reason people seek treatment is to minimize psychosocial problems related to their facial appearance. But we should remember that these problems are not "just cosmetic" and can have a major effect on the quality of life. Facial asymmetry has a high co-relation with attractiveness. Even a slight asymmetry is quickly noticed by the human eye. Greater degrees of asymmetry are co-related with clinical depression, neurosis, inferiority complex, poor self-esteem, and general poor-quality-of-life health problems.