The Six Elements (6E) of Orofacial Harmony are optimal treatment goals for teeth, arches, and jaws.

**ELEMENT I**

**OPTIMAL ARCH CHARACTERISTICS (SHAPE AND LENGTH)**

An arch is optimal when: the root of each tooth is centered over basal bone, the contact areas abut, each crown is inclined so that its occlusal surface can interface and function optimally with the teeth in the opposing arch, the Curve of Spee depth is between 0 and 2.5 mm deep, the Core Line length equals the sum of the mesiodistal diameters of the teeth in the arch, and shapes of the maxillary and mandibular arches are compatible.

The primary landmark for assessing mandibular arch width and shape is the WALA Ridge.

When an optimal mandibular arch is viewed from the occlusal perspective, the FA point to WALA Ridge distance diminishes progressively from approximately 2 mm in the molar area to approximately 0.1 mm in the incisor.
Positioning the teeth accordingly to the WALA Ridge will produce a uniquely correct arch width and shape for an individual patient. This arch width is referred to as distance “X” which is measured between the central fossae of the mandibular first molars.

Optimal mandibular arch width (X) must ultimately be compatible with optimal maxillary arch width (X’). X’ is the distance between the mesio-palatal cusp tips of maxillary 1st molars that are in the Element I position.

**ELEMENT II**

**OPTIMAL ANTERO-POSTERIOR (AP) JAW POSITIONS**

The AP position of the maxilla is optimal when the Facial Axis points (FA pts.) of “Element I” maxillary central incisors are on the GALL. The AP position of the mandible is optimal when, while in centric relation, the “Element I” mandibular central incisors are coupled with the “Element I” maxillary incisors in an optimal maxilla.
The mandible’s basal bone width is naturally optimal for most individuals, excluding those with certain craniofacial anomalies associated with abnormal jaw width development. The width of the maxilla is optimal when the distance (mm) between the mesio-lingual cusp tips of the right and left “Element I” maxillary first molars (X’) is equal to the distance (mm) between the central fossae of the right and left “Element I” mandibular first molars (X).

Jaw heights are optimal when:

a) The mandible is in centric relation.

b) The teeth are in complete (optimal) occlusion.

c) The supero-inferior positions of the “Element I” maxillary central incisors are in harmony with the inferior border of the upper lip in repose.

d) The occlusal plane inclination is between +2° and +10° relative to the head’s transverse plane from the lateral perspective.

e) The occlusal plane is parallel to the transverse plane of the head from the frontal perspective.

f) The lower anterior and posterior face heights are within 10 mm of the middle anterior face height.
ELEMENT V
OPTIMAL CHIN PROMINENCE

The anteroposterior (AP) prominence of the hard tissue chin is optimal when its most anterior portion (pogonion point) is equal in prominence to the PALL (Pogonion’s Anterior Limit Line), a line in the midsaggital plane of the mandible that is perpendicular to the occlusal plane (when the occlusal plane is inclined between $+2^\circ$ and $+10^\circ$ relative to the head’s transverse plane) and passes through the FA point of a mandibular central incisor that is actually or hypothetically Element I.

ELEMENT VI
OPTIMAL OCCLUSION

Element VI defines optimal occlusion for natural dentitions. Optimal occlusion exists when the teeth in each arch are positioned in ways that allow for maximum interfacing between the occlusal surfaces of the teeth in opposing arches, allow proper interaction during functional jaw movements, and distribute the forces of mastication, via the teeth, to healthy and robust supporting tissues (alveolar bone, basal bone, gingiva, and temporomandibular joint). In addition, the mandible should: be in centric relation relative to the glenoid fossae, enjoy a physiologic envelope of movement, and have a 3-5 mm freeway space at rest.

For all aspects of occlusion to be optimal attention must be given to the positions of the crowns, the roots, the supporting tissues, the temporomandibular joints, and the jaws. Teeth cannot occlude properly in the presence of significant inter-jaw positional discrepancies. Even when jaw positions and crown positions are optimal, the roots of the teeth may or may not be positioned over basal bone.
The Six Keys to Optimal Occlusion are the tooth position characteristics found to be shared by individuals with naturally optimal occlusions. Categorically they include: 1) interarch relationship, 2) crown angulations, 3) crown inclinations, 4) rotations, 5) spaces, and 6) occlusal plane.

Fundamental to optimal occlusion is the coincidental presence of Elements I-IV as well as the “Six Key” tooth positions. Element I ensures that the inclinations of the crowns of the teeth are correct, the roots of the teeth are over basal bone, the occlusal plane is level (between 0 mm and 2.5 mm deep), and the contact areas abut. Element II ensures that the mandible is in centric relation and that the AP interarch relationship is correct. Element III insures that the widths of the arches (and jaws) are compatible. Element IV ensures proper vertical relationships of the jaws and arches and proper freeway space. The remaining components of the Six Keys not previously addressed in Elements I-IV are crown angulations and rotations. Crown angulations and rotations can be easily dealt with during fixed appliance therapy and are automatically corrected with a correctly prescribed and sited Straight-Wire Appliance.
REFERENCES

3. Trivino T, Siqueira DF, Andrews WA. Evaluation of the distances between the mandibular teeth and the WALA Ridge in a Brazilian sample with normal occlusion. AJODO. 2010;137(3):308-309 (online only).


