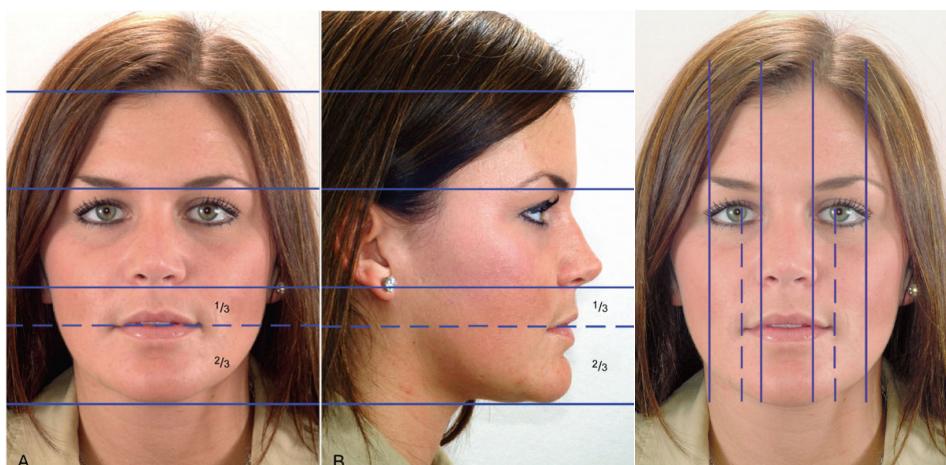
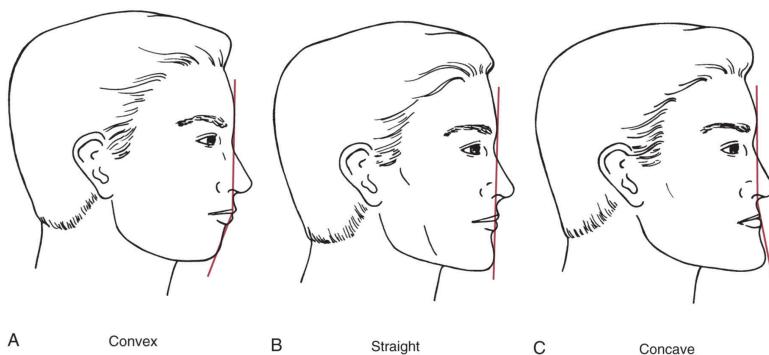


- Assess facial proportions, detect disproportions:
Distorted and asymmetric facial features are a major contributor to facial esthetic problems, whereas proportionate facial features are generally accepted in all cultures even if they are not beautiful.
 - Usually the right side of the face is a little larger than the left side.
- Frontal:**
- Small degree of bilateral facial **asymmetry** is normal.
 - **Proportion of face height / width (the facial index):**
→ Establishes the overall facial type and the basic proportions of the face.
 - **Vertical facial thirds:**
Distance hairline to the base of nose = base of the nose to the bottom of nose = bottom of nose to the chin.
 - Lower third is slightly longer than the central third in modern Caucasians (*Farcas, 1987*).
 - Lower third: $\frac{1}{3}$ above the mouth to $\frac{2}{3}$ below.
 - **Proportion of the eyes / nose / mouth.**
 - **Midline deviation.**
D. Mirabella: The inclination of the midline is rated more important than a midline shift



An ideally proportional face can be divided into central medial, and lateral equal fifths. The separation of the eyes and the width of the eyes, which should be equal, determine the central and medial fifths. The nose and chin should be centered within the central fifth, with the width of the nose the same as or slightly wider than the central fifth. The interpupillary distance (*dotted line*) should equal the width of the mouth.

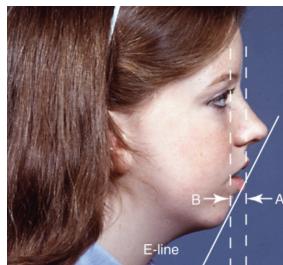
- Profile**
- Jaw proportionately positioned in the anterior posterior plane → Assess convexity of the face.
Normal = straight or slightly convex profile.
In case of a disproportion, it does not indicate which jaw is wrong.



- Lip posture and incisor prominence:**
- Lip prominence is strongly influenced by racial and ethnic characteristics and age related.
 - The lip relationship with the nose and chin affects the perception of the lip fullness.
To camouflage a big nose, the chin must be more prominent.
 - Major indicators of excessive lip support by the dentition:
 - Lip separation at rest.
 - Lip strain on closure.
 - Bimaxillary dentoalveolar protrusion:
= Both lips are protruding due to important incisor proclination to gain space.

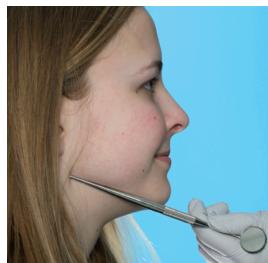
(Proclined incisors align themselves in an arc of a larger circle: → if retrusive incisors are present, less space is available.)

- Evaluation of lip prominence:
 - Observe the distance that each lip projects forward from a true vertical line through the depth of the concavity at its base = soft tissue points A & B.
→ a different line of reference is used for each lip.
 - Lip prominence of > 2-3 mm in the presence of lip incompetence indicates dentoalveolar protrusion.



- Excessive incisor protrusion exists if:
 - Lips are prominent and everted.
 - Lips are separated at rest > 3/4 mm.
(Some lip separation is normal in children, but breathing through the nose is also possible while the lips are apart.)
- **E-line** (Ricketts, 1960): Line from the nose tip to the chin:
Lips should be on or slightly before the line.
The position is influenced by vertical facial and dental relationships:
E.g. short lower face height → lips can be protrusive.
- Patients with short lower face height can have everted and protrusive lips, because they are overclosed and the upper lip presses against the lower lip.
→ Evaluate the mentolabial fold angulation (angle between the labial surface of the lower lip and the labial surface of the chin). Normally this angle is somewhat obtuse. A greatly decreased angle indicates overclosure.

- **Check the mn plane angle**



- **Throatform:**
 - **Contour of the submental tissues** (straight is better).
→ Submental fat deposition and a low tongue posture contribute to a stepped throat contour.
 - **Chin-throat angle** (closer to 90° is better).
 - **Throat length** (long is better up to a certain point).



Mini-esthetics: Tooth-lip relationship

- Smile variables:																																																							
<table border="1"> <thead> <tr> <th>Variable</th><th>Ideal</th><th>Maximum</th><th>Minimum</th></tr> </thead> <tbody> <tr> <td colspan="4">Variables Best Viewed in Full Face</td></tr> <tr> <td>Smile arc</td><td>Tracks the lower lip</td><td>0.6mm higher at canines</td><td>Greater than flat</td></tr> <tr> <td>Buccal corridor (as % black space of intercommissure width)</td><td>16%</td><td>88%</td><td>8%</td></tr> <tr> <td>Gingival display</td><td>2.3mm tooth coverage</td><td>0.8mm tooth coverage</td><td>4.5mm tooth coverage</td></tr> <tr> <td>Occlusal cant</td><td>0</td><td>2.8 degrees</td><td></td></tr> <tr> <td>Upper to lower dental midlines</td><td>0</td><td>3.6mm</td><td></td></tr> <tr> <td colspan="4">Variables Viewed Either in Full Face or as Close-up of Lower Face</td></tr> <tr> <td>Upper dental midline to face</td><td>0mm</td><td>2.9 to 3.2mm</td><td></td></tr> <tr> <td>Upper central to central incisor gingival height discrepancy</td><td>0mm</td><td>2.0 to 2.1mm</td><td></td></tr> <tr> <td>Upper lateral to central incisor gingival height discrepancy</td><td>-0.4mm</td><td>0.4 to 1.2mm</td><td>-1.9 to -2.9mm</td></tr> <tr> <td>Overbite</td><td>2 to 2.3mm</td><td>5.4 to 5.7mm</td><td>0.4 to 0.9mm</td></tr> <tr> <td>Upper central to lateral incisal edge step</td><td>1.2 to 1.4mm</td><td>2.0 to 2.9mm</td><td></td></tr> </tbody> </table>	Variable	Ideal	Maximum	Minimum	Variables Best Viewed in Full Face				Smile arc	Tracks the lower lip	0.6mm higher at canines	Greater than flat	Buccal corridor (as % black space of intercommissure width)	16%	88%	8%	Gingival display	2.3mm tooth coverage	0.8mm tooth coverage	4.5mm tooth coverage	Occlusal cant	0	2.8 degrees		Upper to lower dental midlines	0	3.6mm		Variables Viewed Either in Full Face or as Close-up of Lower Face				Upper dental midline to face	0mm	2.9 to 3.2mm		Upper central to central incisor gingival height discrepancy	0mm	2.0 to 2.1mm		Upper lateral to central incisor gingival height discrepancy	-0.4mm	0.4 to 1.2mm	-1.9 to -2.9mm	Overbite	2 to 2.3mm	5.4 to 5.7mm	0.4 to 0.9mm	Upper central to lateral incisal edge step	1.2 to 1.4mm	2.0 to 2.9mm				
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<ul style="list-style-type: none"> - Symmetry of the dental midline of each arch to the skeletal midline of that jaw. - Up-downward transverse rotation of the dentition. - Vertical relationship of the teeth to the lips at rest and on smile. - Overbite: 2-2.3 mm best 																																																							
<p>- Smile analysis: Two smiles:</p> <ol style="list-style-type: none"> 1. Posed or social smile: <ul style="list-style-type: none"> o Reproducible, presented to the world usually. o = Focus of orthodontic tx. 2. Enjoyment smile: <ul style="list-style-type: none"> o Varies with the emotion being displayed. 																																																							
<p>- Smile arc: = Relationship of the curvature of the lower lip to the curvature of the maxillary incisors. Best appearance if the two lines match each other.</p>																																																							
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<p>- Gingiva:</p> <ul style="list-style-type: none"> o Ideal elevation of the lip on smile for adolescents: Slightly below the gingival margin with 2 mm tooth coverage. o 1-4 mm tooth coverage is still considered attractive. 																																																							
<p>Influencing factors for gingiva display:</p> <ul style="list-style-type: none"> o Usual cause for excessive display of mx gingiva is a long-face due to excessive downward growth of the mx which moves the mx down below the upper lip and results in a disproportionately long lower third of the face. o DD Incomplete gingival recessions that accompanies eruption in childhood. o DD Incomplete eruption and short upper lip. 																																																							
<p>- Buccal corridor: = Distance between the maxillary posterior teeth (especially premolars) and the inside of the cheek.</p>																																																							

- Minimal buccal corridors of 16% are favored.
 - Transversal arch width should be related to the face.
- Some “smile-features” are viewed differently by patients when the full face is the context and they are not focused only onto the mouth:
 - Upper incisal edges and canines should parallel the curvature of the lower lip.
 - Transverse cant of the occlusal plane is less tolerated by patients.
Notification dentist: ≥ 1 mm.
Notification layperson: $\geq 2-3$ mm = $3-4^\circ$.
 - More upper to lower midline discrepancy is acceptable.
 - Small buccal corridors are preferred.
 - Facial attractiveness and gender make a difference for some of the mini-esthetic-features.
 - Mesial or distal tip of an upper incisor > 2 mm is judged unaesthetic.

TABLE 6.7 Esthetic Variables: Maximum and Minimum for Esthetic Acceptability Considering Facial Attractiveness and Gender

From Chang C, Springer NC, Fields HW, et al. *Am J Orthod Dentofac Orthop.* 2011;140:e171–e180.

Some smile variables are influenced by facial attractiveness and gender. This can be difficult to manage given the need to determine the patient’s facial attractiveness. To simplify application of the information, the range of acceptability or “common ground” for all levels of facial attractiveness is noted below for each gender.

Smile Variable	Gender	Maximum	Minimum
Buccal corridor (percentage dark space of intercommissure distance)	M	24	15
		17	10
Gingival display (mm of tooth coverage)	M	0.5	1
		0.5	0.5
Smile arc (mm canine above incisal edge + or below -)	M	3.8	1.8
		3.8	1.8
Upper midline to face	M	2.3	0
	F	2	0