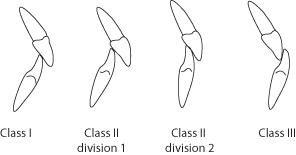
**Class I malocclusion**



-class I definition :

Our main standard in defining class I is the **UPPER CENTRAL INCISORS**   
**class I incisal relationship** :

Is When the incisal edges of the lower incisors occludes **with** or is **directly below** the **cingulum plateau** of the upper incisors.

**Cingulum plateau** : (a flat area) in the middle of the cingulum

Please note that there is no way that you can find class I with an increased **overbite** , it may be

1)normal overbite

2)reduced overbite

Except if there’s erosion either in the upper or lower teeth ,you may do.

\*when someone has **a class I malocclusion** it means that he has a **class I incisal relationship.**

-Occlusion & alignment are two different things.

-class I **is the most common** malocclusion , 60% of the Caucasian race have a class I malocclusion.

Most people have **class I with crowding.**

**-The etiology of class I malocclusion :**

**1- Skeletal factors.**

**2-Soft tissue factors.**

**3-Dental factors**

**1-The skeletal factors:**

Usually ,they are normal (skeletal class I) due to the process of dento-alveolar compensation .

**dento-alveolar compensation:**

the adaptive mechanisms from the soft tissues- mainly- trying to compensate or camouflage the malocclusion by achieving an incisors class I in spite of the presence of skeletal problems .

-when we have class 2 or 3 malocclusion ,one of the treatment options is to accept the skeletal problem & to try to camouflage it by having an incisors class I relationship.

**In skeletal class II ,we can achieve compensation by   
1)proclination of the lower incisors  
or**

**2)retroclination of the upper incisors**

So the patient still have skeletal class II but his incisors are in class I.

In skeletal class III:  
we achieve the compensation by :  
1)**retroclination of the lower incisors**

2)**proclination of the upper incisors**

**Transverse :**

usually normal in class I.

it doesn’t mean that you wont find skeletal class I patients with other types of asymmetry.

But usually asymmetries exist in other skeletal classes more.

**Vertical :**

**Normaly** it’s a normal vertical relationship but it can be increased,the most common vertical problem with incisal class I is **increased facial height** (openbite ).

**2-Soft tissue factors.**

Usually normal aka favorable for compensation.

But there is a special case ,bimaxillary proclinaton where the Patient has full everted lips so **lips activity** is **reduced** & the balance is shifted toward the tongue **proclining the upper incisors** .

Bimaxillary proclination is common in afro-Caribbeans.

In normal cases ,there is a balance between the tongue & the lips with the tongue being a little more active.

when the activity & tonicity of the lower lips decreases ,the tongue can push the incisors more forward than the normal situation.

-the stabilizing factor of teeth is the **PDL**.

Note that its called **bimaxillary proclination** & not protrusion.

-Protrusion is said for both jaws ,while proclination for the incisors.

**3-The dental factor:**

The main cause for class I malocclusion is dentally related ,mainly **teeth size /arch length discrepancy ,**

**crowding b**eing more common than spacing**.**

Any local factors that we took before may accompany class I malocclusion (missing teeth, supernumerary teeth,frenum ,etc)

**Facial growth**

By looking at the underlying skeletal structures that are usually normal in class I,facial growth is also usually normal.

class I may be associated with some abnormalities in deviation of growth especially **increased facial height** (openbite) With **posterior growth rotation.**

**Incisal relationship**

Overjet is usually normal but can be slightly increased

Openbite is normal or reduced but not increased except if we have erosion or attrition.

**Buccal segment relationship (molars & premolars)**

Usually class I .

molar relationship depends on skeletal & dental factors,so if we have missing teeth or early loss of teeth ,this molar relationship can change.

So If we have no problems we’ll have molar class I classification in skeletal class I & incisal class I patients.

As a **functional aspect** ,usually we have no problems except if we have crossbite ,crossbite & mandibular displacement.

In patients with thumb sucking or in standing tooth,when trying to achieve full intercuspation in the rest position there is a **premature contact** so the patients deviates his mandible to one side.

A side note:

Crowding does not make patients more susceptible to caries.

Having a localized crossbite or a local problem ,it may cause oral health problem ,like in standing lower incisor it may cause attrition ,recession &mobility.

**Objectives of treating class I malocclusion patients:**

1)we start correcting any mandibulr functional problem (displacement or deviation).

-So if the patient has a crossbite ,we have to:

- expand the upper arch

-relief the crowding.

-Align the teeth

-Maintain the normal overbite ,

-Maintain overjet

-Control the labio-lingual postion of the incisors(not to procline it)

- maintain class I molar relationship.

we usally start with lower arch ,maintaining the lower incisors width & proclination.

because its usually not stable to change the inclination of the lower teeth due to the forces of the tongue & lips so we don’t want to affect the balance between tongue & lips

**so** we correct the lower arch then build the upper arch depending on it.

-we accept the **form & width of the lower arch** because anychang**e** in postion is not stable.

-usually in class I, if we extract a tooth in the lower arch we need to extract a similar tooth in the upper arch:

For example :if we extract a lower 4 ,we extract the upper 4 for **balancing** with few exceptions like if we have a curious upper 5 its not logical to extract the 4 so we extract the 5.

But as a general rule: **we match the extraction.**

**Treatment Options available in treating class I malocclusion(we assume that there is no skeletal problem so no camouflage ):**

**1)accept (no treatment) in mild malocclusion.**

Depending on **IOTN** we determine the severity of malocclusion.

IOTN : index of orthodontic treatment need (A SCORE From 1-5) used to objectively determine the severity of malocclusion.

Mild cases usually are not treated or we can extract without appliances.

Sometimes all the teeth are well aligned except A local crowding so

**1)extract**

2)**use a space maintainer**

**3)let the teeth align by themselves**

this happen only in growing patients or when the canine is mesially angulated.

So if we have an erupting mesially angulated canine ,we extract the 4 & wait 6 months so it’ll correct & upright itself.

**Another case :**

-patient has a well aligned teeth but he had an early loss of E, consequently he had crowding.

What we have to do is to **extract the 4** ,put a **space maintainer** & **wait for the 5 to fully erupt.**

**We used a space maintainer** because the space in this case is critical &we don’t want to lose it.

-Within 6 **months** ,mesially angulated teeth can upright themselves especially in the lower arch.

**2)growth modification.**

In removable applicane ,we do **tipping movement ,for single or two teeth only** not more.

For **multiple movements(**more complex movements, bodily,rotation other than just tipping movements) **,especially in both arches** we use **fixed appliances.**

Again **,bimaxillary proclination :**

A soft tissue problem where there is an imbalance between the **forces of the tongue** & **the lips** ,when the tongue has a higher force so it pushes the teeth.

it runs in some racial groups ike the africo-caribbean.

**-**fixing the malocclusion in bimaxillary proclination we have to consider **the racial background** bcause it may not be stable like if we upright the teeth in an African patient it may not look like his own race.

Although many Africans seek treatment to look more like the Caucasians.

The type of appliance used in treating bimaxillary proclination is **fixed appliance** because we want to retrocline the lower teeth ,not only the upper.

it worth mentioning that it needs **permanent stabilization** especially in Africans because of the tongue.