Diagnosis and treatment planning for Orthodontic cases
Modern Orthodontics

In the 21st Century, Orthodontics differs in:

• The concept of growth modification was introduced after the discovery of cephalometry

  More emphasis on esthetics (Psychology)

  Patients expect a greater degree of involvement in treatment planning (Chief Complaint oriented T.P.)

  Is offered much more frequently to adults than before
The objectives of the Modern Orthodontics

Esthetics (Psychology) •
Stability •
Health and Longevity •

Creation of the best balance between occlusal relationships, dental and facial esthetics, stability of the results and long term maintenance
CLASS III MALOCCLUSION

STRAIGHT PROGNATHIC
CLASS III MALOCCLUSION

LATE MIXED DENTITION
CLASS III MALOCCLUSION
ANTERIOR CROSSBITE
CLASS III MALOCCLUSION

DEEP OVERBITE
MAXIMUM INTERCUSPATION
CLASS III MALOCCLUSION

INITIAL CONTACT POSITION
CLASS III MALOCCLUSION
MAXILLARY DENTAL PROTRACTION
MANDIBULAR DENTAL RETRACTION
INCREASE THE VERTICAL DIMENSION

PARTIAL FIXED APPLIANCES
CLASS III ELASTICS
CORRECTION OF ANTERIOR CROSSBITE
CLASS III MALOCCLUSION

POST-TREATMENT
NORMAL PROFILE
CLASS III MALOCCLUSION

POST-TREATMENT
NORMAL OCCLUSION
CLASS III MALOCCLUSION

POST-TREATMENT
Epidemiology of Malocclusion (NHANES III)

30% of US youths and children have normal occlusion:
Class I (50-55%),
Class II (23% in children /13 to 15% in youths and adults)
Class III (< 1%)
Posterior cross bite is relatively rare at all ages
There was a tendency to decreased size and number of teeth

Modern Humans have underdeveloped jaws

Imbalance between the progressive decreased jaw size and tooth size can lead to teeth crowding or spacing

Less use of masticatory forces with softer food could have lead to an increase in malocclusion
Need for orthodontic treatment

Protruding, irregular, or maloccluded teeth can cause three types of problems for the patient:

Discrimination because of facial appearance
Problems of Oral functions and TMD
Greater susceptibility to trauma, periodontal disease, or tooth decay
Psychological problems

Malocclusion is likely to be a social handicap. Well-aligned teeth and pleasing smile carry positive status to all social levels.

Appearance makes a difference in teachers' expectations and therefore student progress, in employment and in competition for a mate.

An individual who is grossly disfigured can anticipate a consistently negative response.
Oral function

Severe malocclusion can compromise mastication as in Open bite cases

With severe malocclusions, certain sounds might be impossible to be produced and patients usually need speech therapy (as in Cleft lip/palate patients)

Severe malocclusions (Class III, anterior open bite, posterior cross bite and rotated/tipped teeth) correlate positively to TMD

So, Malocclusion + TMD may indicate the need for orthodontic treatment.
Relationship to injury and Dental diseases

Malocclusion contributes to caries and periodontal disease by increasing the areas of food stagnation.

Trauma from occlusion due to improper alignment of teeth can cause periodontal diseases.

Protruded incisors as in Class II Division 1 malocclusion, can make the patient more prone to trauma than well-aligned incisors.
Epidemiologic estimate of orthodontic treatment need and demand:

About 35% of adolescents are perceived by parents and peers as needing orthodontic treatment.

Dentists recommend treatment for another 20%.

There is more orthodontic need in urban areas than in rural areas.

Demand for orthodontic need is correlated to family income.