Pediatric Obstructive Sleep Apnea (POSA)
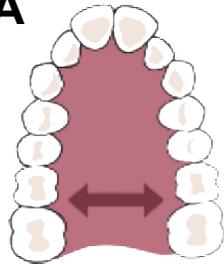
Multiple linear regression model
POSA Risk Score (PRS) = − 0.14075 + 0.09823 × ANB angle
+ 0.09467 × Mandibular crowding + 0.26468 × Maxillary constriction
+ 1.01392 × Nighttime and daytime oral breathing

Synergistic interactions of orthodontic factors affecting risk of POSA
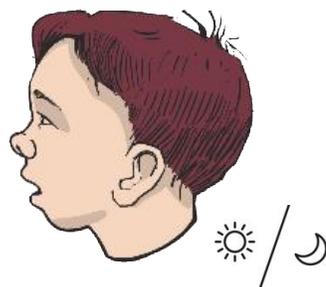
Mandibular crowding

Maxillary arch constriction

Increased ANB angle

Preference of oral breathing

Prevalence of POSA in 100 orthodontic patients based on apnoe-hypopnoe index (AHI) measured by home sleep polygraphy

AHI/PRS

Prevalence

AHI or PRS values > 5
risk of moderate/severe POSA

→ *indicating that the child should be referred to a sleep specialist*

AHI or PRS values of 1-5
risk of mild POSA

AHI or PRS values < 1
a minimal risk of POSA

5

4

3

2

1

0

7 % children

61 % children

32 % children