5) Patient is asked to seal the lips, difficulty breathing through nose should be noted. One nos- 
  tril can be occluded and the re- 
  sponse noted to the same proce- 
  dure on the other side. (Fig. 10)

The evaluation of nasal air- 
  way patency is complicated, 
  especially when the possibility ex- 
  ists that airways may clinically appear inadequate but be quite functional physiologically. Lip 
  separating or an open-mouth habit is not an infallible indicator of mouth breathing. Often com- 
  plete nasal respiration is coupled 
  with dental conditions that cause open-mouth posture. 10

Adenoid Evaluation 
The size of adenoids have been evaluated using different me- 
  thods of assessment:

2) flexible optic endoscopes (Fig. 10), nasal 

3) Functional rhinomanometry (lateral cephalometric x-ray), 

4) direct measurements during surgery. 

Direct measurements are considered to be the most accu- 
  rate because space can be as- 
  sessed in three directions.12 A 
  lateral cephalometric radiograph is an added valuable diagnostic tool for the orthodontist in the evalua- 
  tion of children with upper air- 
  way obstructions.14 (Fig. 12).

Treatment of Nasal Obstruction 

1) Adenoidectomy with or with- 
  out tonsillectomy is indicated if hypertrophied adenoids (and tonsils) are the cause of upper airway obstruction.3 

2) Septal surgery (rarely indi- 
  cated in the child), but may be 
  considered in the presence of a 
  marked nasal septal deflection with impaction. Conservative septal surgery in growing pa- 
  tients will not have an adverse effect in dentofacial growth. 3,10,18

3) Maxillary expansion (RME or XAME)—an orthodontic procedure that widens the nasal vault.19 (Fig. 15).

4) Cryosurgery or electric 
  surgery—this is a viable option 
  for patients with vasomotor rhinitis.7

5) Bipolar Radiofrequency Ablation (allergic rhinitis)—performed under local anesthetic.

6) Inferior turbinectomy—using powered instrumentation.

7) Use of nasal sprays.

Conclusion 
The effect of adenoids on fa- 
  cial expression, malocclusion and mode of breathing has been a topic of debate and investigation by practitioners in the field for the last one hundred years. A review of the literature expresses several theories.

A healthcare provider with a practice philosophy based on prevention of malocclusion de- 
  velopment cannot ignore the early years of the patient’s growth cycle. By age twelve, 90 percent of cran- 
  io-facial growth has already oc- 
  curred. This is the age when many practitioners begin ortho- 
  dontic treatment.7 But this is the age when 80-90 percent of cran-
  io-facial growth is complete, so 
  most formation and/or deforma- 
  tion has occurred.16 To wait until 
  90 percent of the alveolar bone has 
  occurred, before beginning treatment, is not consistent with a preventive philosophy. Inter- 
  cep tive measures must be initiated sooner.

Early intervention requires an acceptance of a multidiscipli- 
  nary approach to total patient health. An integrated approach to patient evaluation, diagnosis and treat- 
  ment is most effective. Pri- 
  mary care physicians, dentists, allergists, orthorhinolaryngolo- 
  gists and orthodontists must all 
  work together for early preven- 
  tion and management of young patients with increased nasal air- 
  way resistance.

After diagnosis, a compre- 
  hensive risk benefit analysis re- 
  garding early intervention must be considered. Although heredi-
  1tary and environmental factors must be considered, the univer-
  sal goal is the promotion of proper nasal respiration throughout a child’s early years of facial growth.

Figure 14 shows the before and after treatment results of a young girl who had her adenoids removed, then underwent maxil- 
  lary expansion before full-fixed braces. She was treated as a sec- 
  ond opinion against the removal of four premolar teeth.

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