

# Non-surgical treatment options

# Miscellaneous options

- Weight loss and muscle toning
- Sleep on side rather than on back
- Avoid heavy meals within 5 hours of bed
- Avoid alcohol in the evening
- Avoid smoking
- Sedative effects of tranquilizers, sleeping pills, antihistamines, etc. can also impact OSA. Check with MD to see if okay.
- Elevate head of bed
- Going to bed exhausted increases risk
- Nose strips



## Miscellaneous treatment

Tennis ball T-shirt may help you sleep on your side.

B3



## Miscellaneous treatment

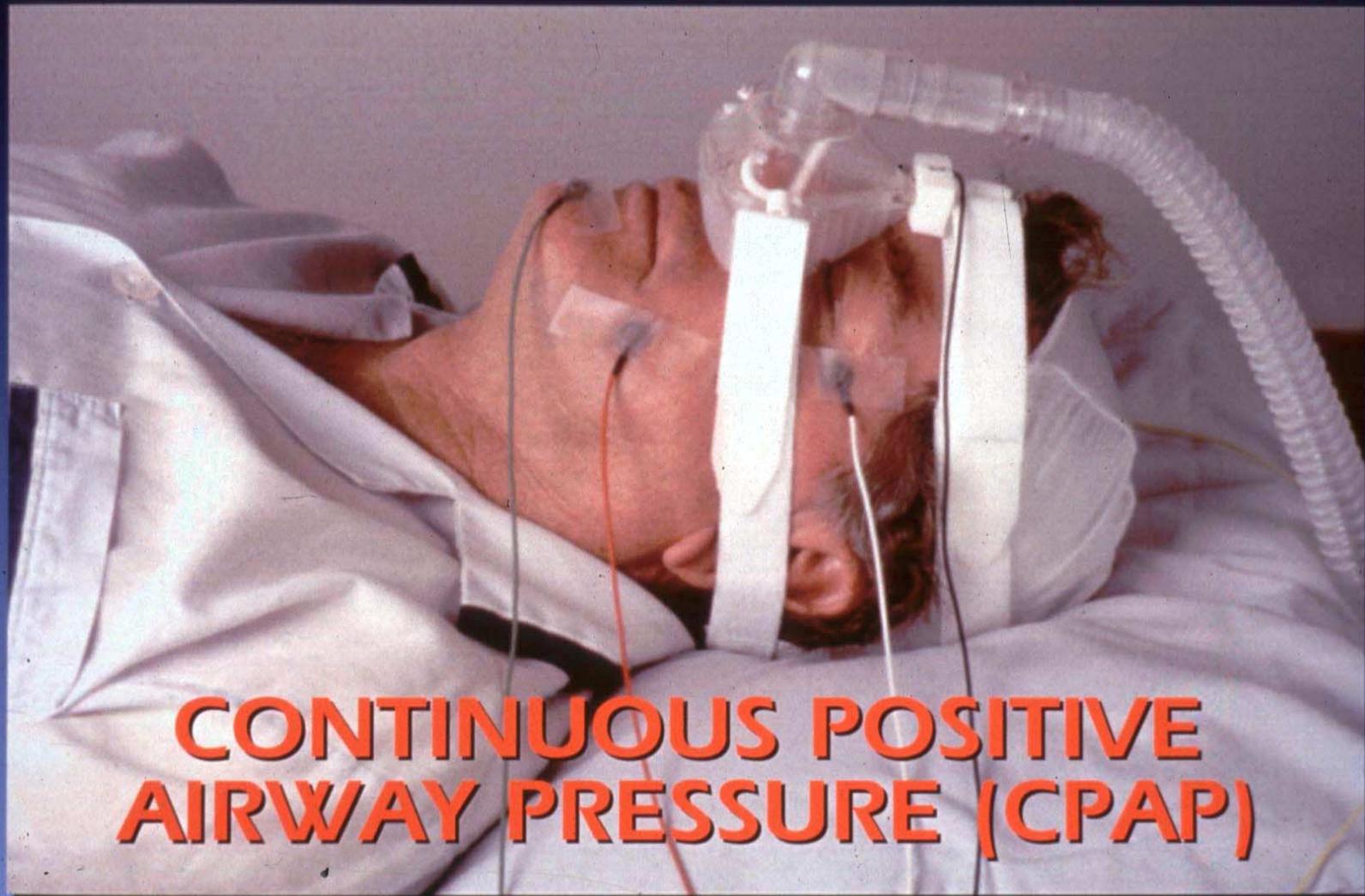
Parker's Snore Relief  
Cushion

- will keep you off your  
back



B5 Nasal strip can help if some blockage is in nose

# Continuous Positive Airway Pressure (CPAP) Treatment



B7 Hospital sleep study - electrodes and CPAP

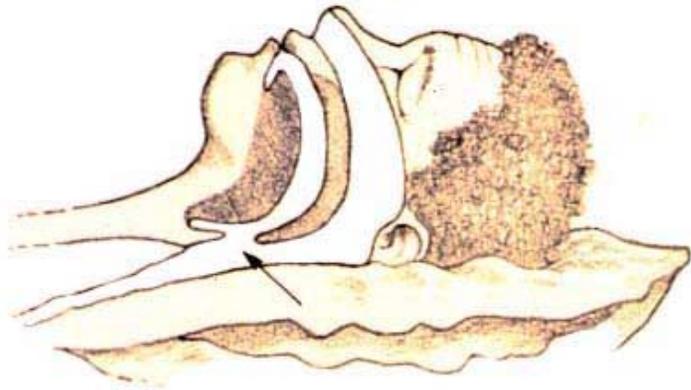


B8

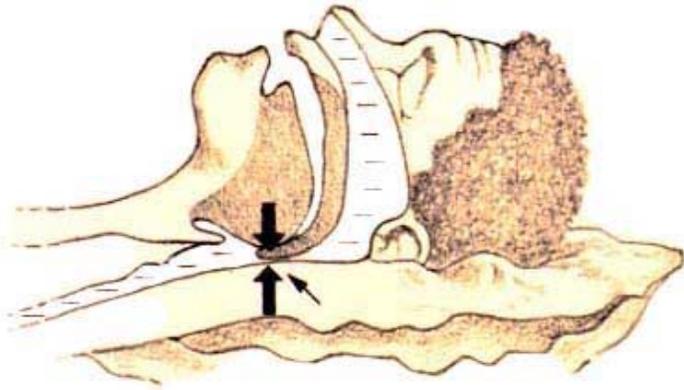
Sleeping with CPAP

## How CPAP works

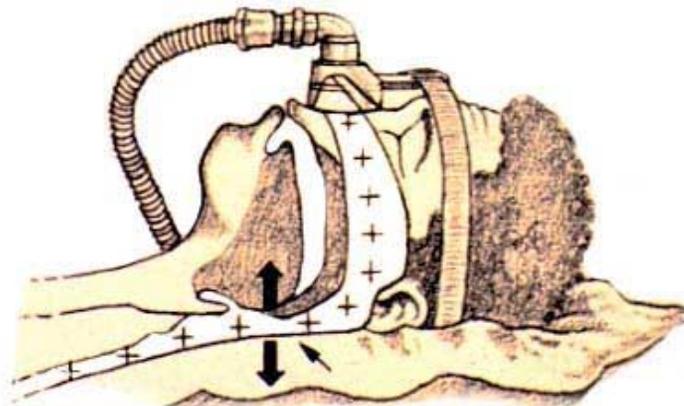
1 - No obstruction while patient is awake.

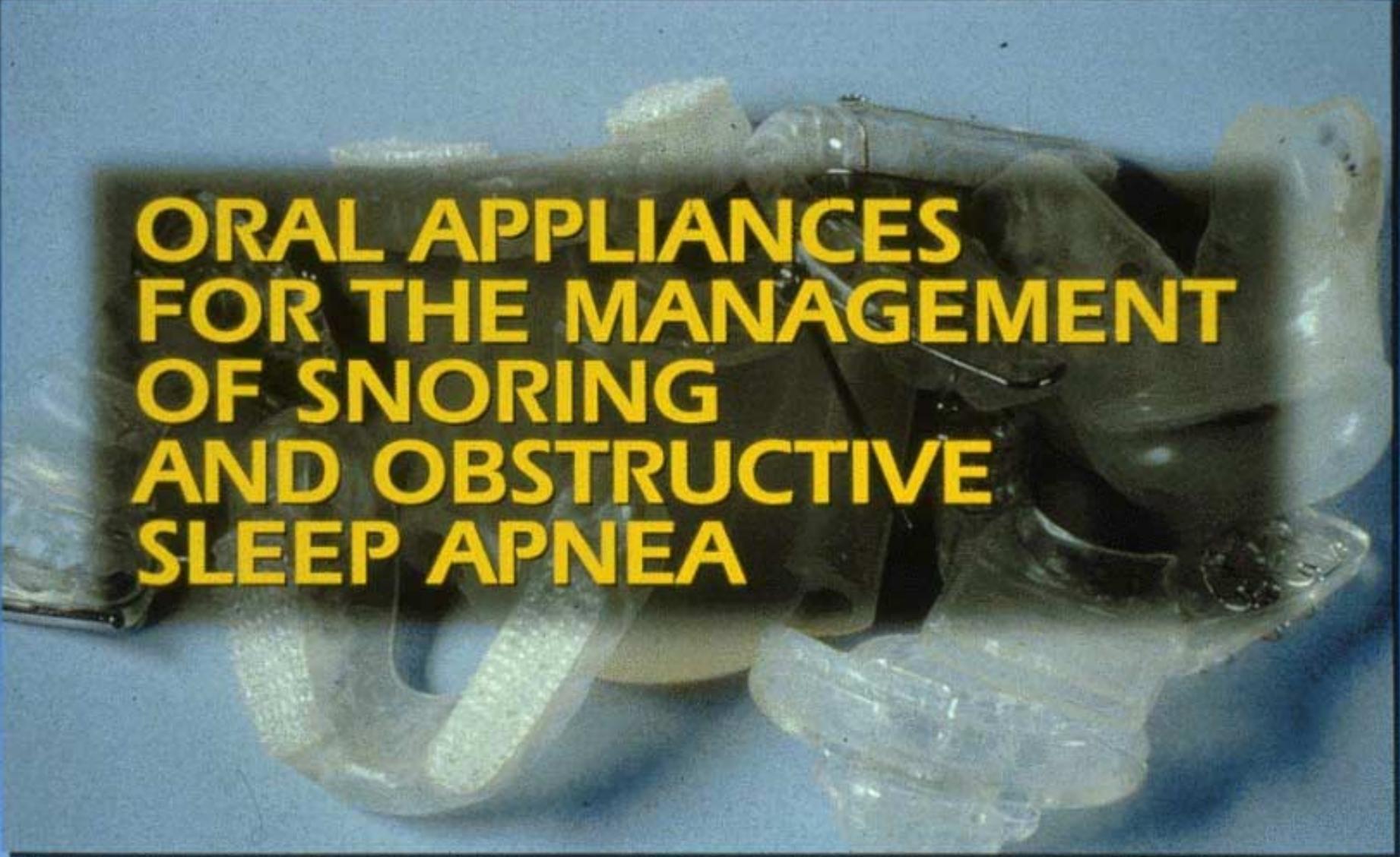


2 - Loss of muscle tone while asleep lets tissue fall back and block airway



3 - CPAP forces air past obstruction





**ORAL APPLIANCES  
FOR THE MANAGEMENT  
OF SNORING  
AND OBSTRUCTIVE  
SLEEP APNEA**



**In a review by the American Sleep Disorders Association, it is stated that:**

“Oral appliances present a useful alternative to continuous positive airway pressure (CPAP), especially for patients with simple snoring and patients with obstructive sleep apnea who cannot tolerate CPAP therapy.”

Wolfgang Schmidt-Nowara et al. Oral Appliances for the Treatment of Snoring and Obstructive Sleep Apnea: A Review; *Sleep*, 1995; 18(6):501-510

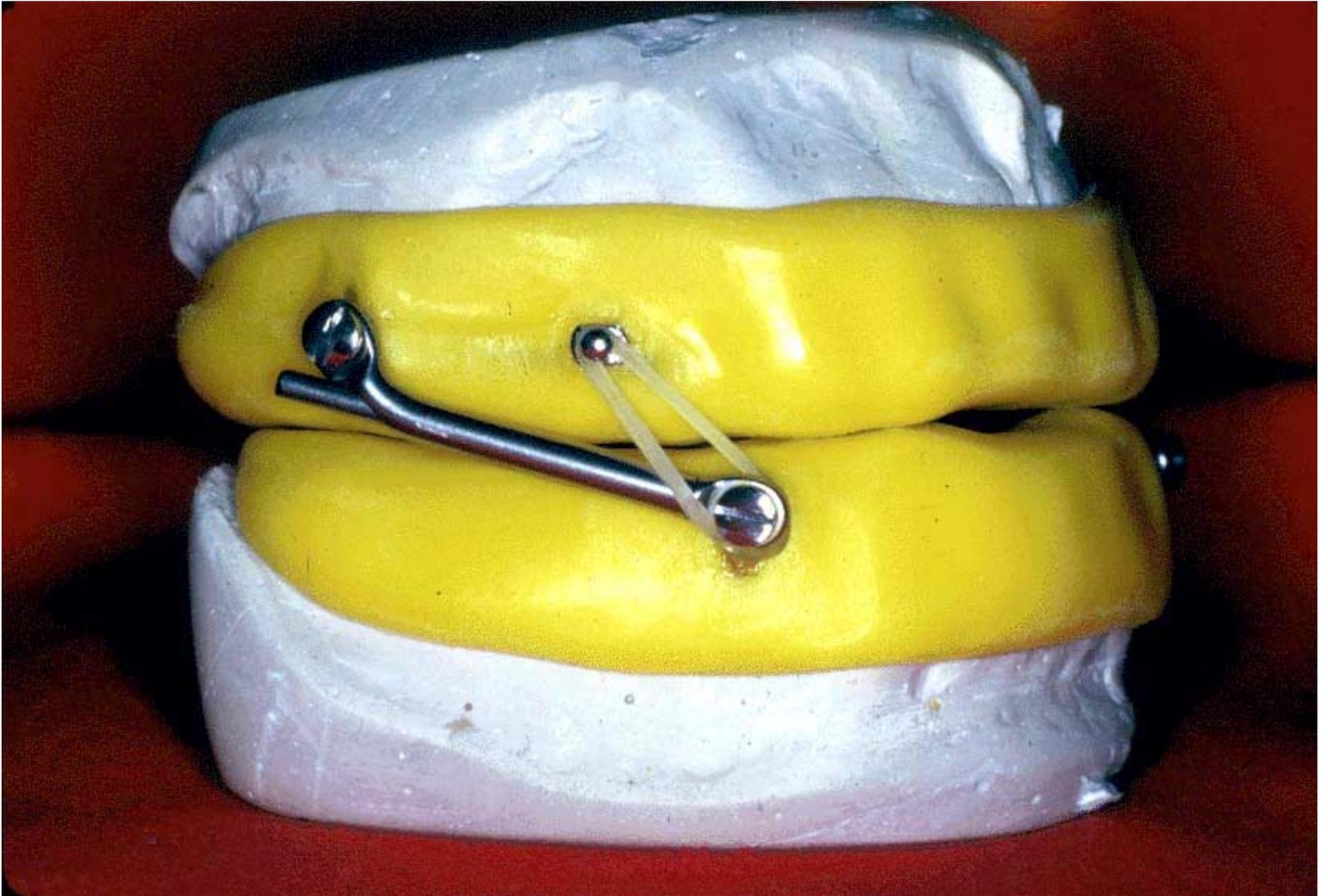


Dissection demonstrating attachment of tongue to the inside of lower jaw (no teeth present). By advancing the lower jaw with an appliance, the tongue is moved forward and hopefully opens the airway in the area of the base of the tongue.

# HERBST APPLIANCE

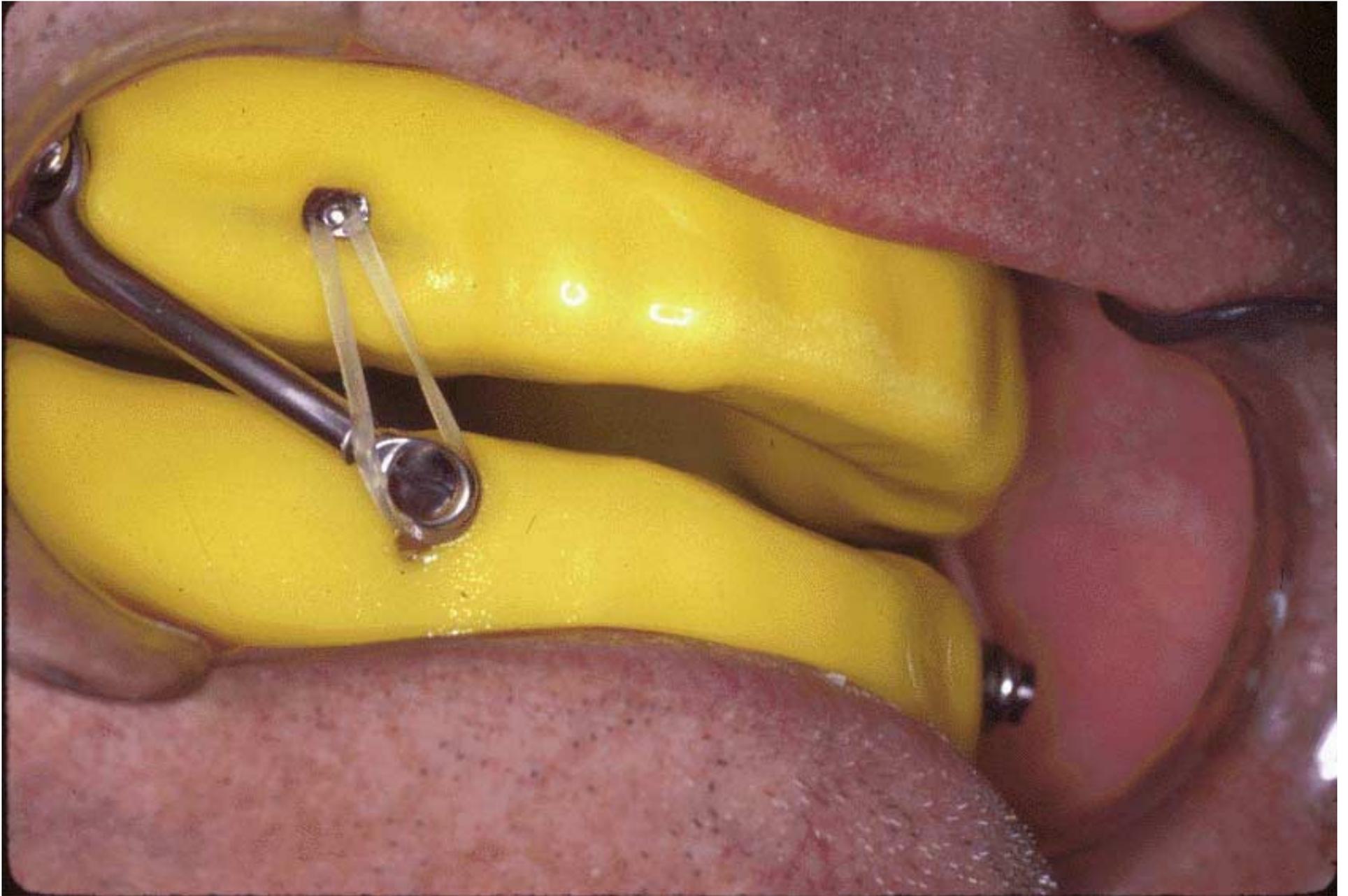


B13



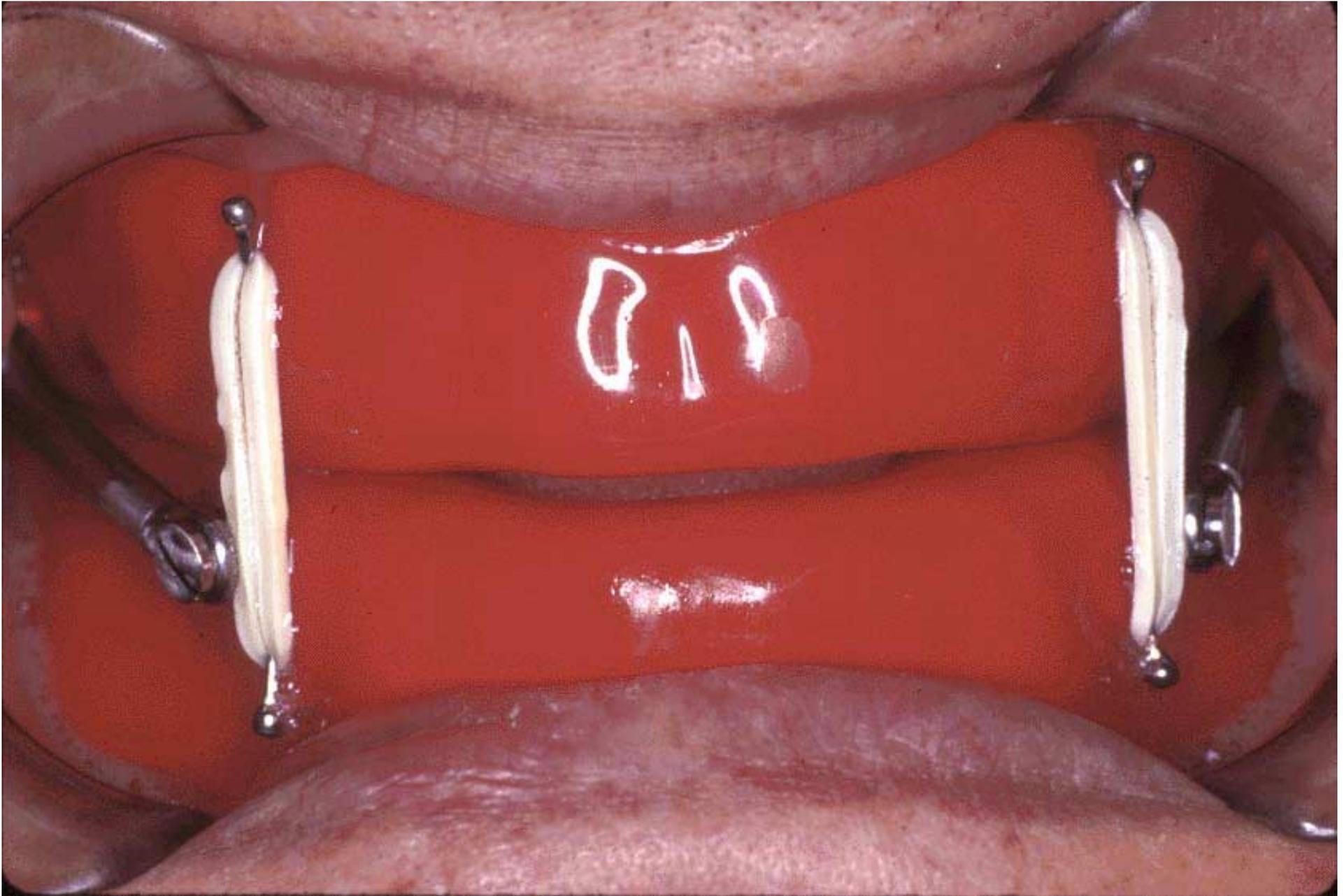
B14

Herbst appliance on models



B15

Herbst appliance in the mouth



B16 Can be made in red if you are a Kansas City Chiefs fan!



B17 A hard Herbst may be needed by bruxers / clenchers

# NOCTURNAL AIRWAY PATENCY APPLIANCE (NAPA)



B18 Appliance developed by Dr. Peter George



B19

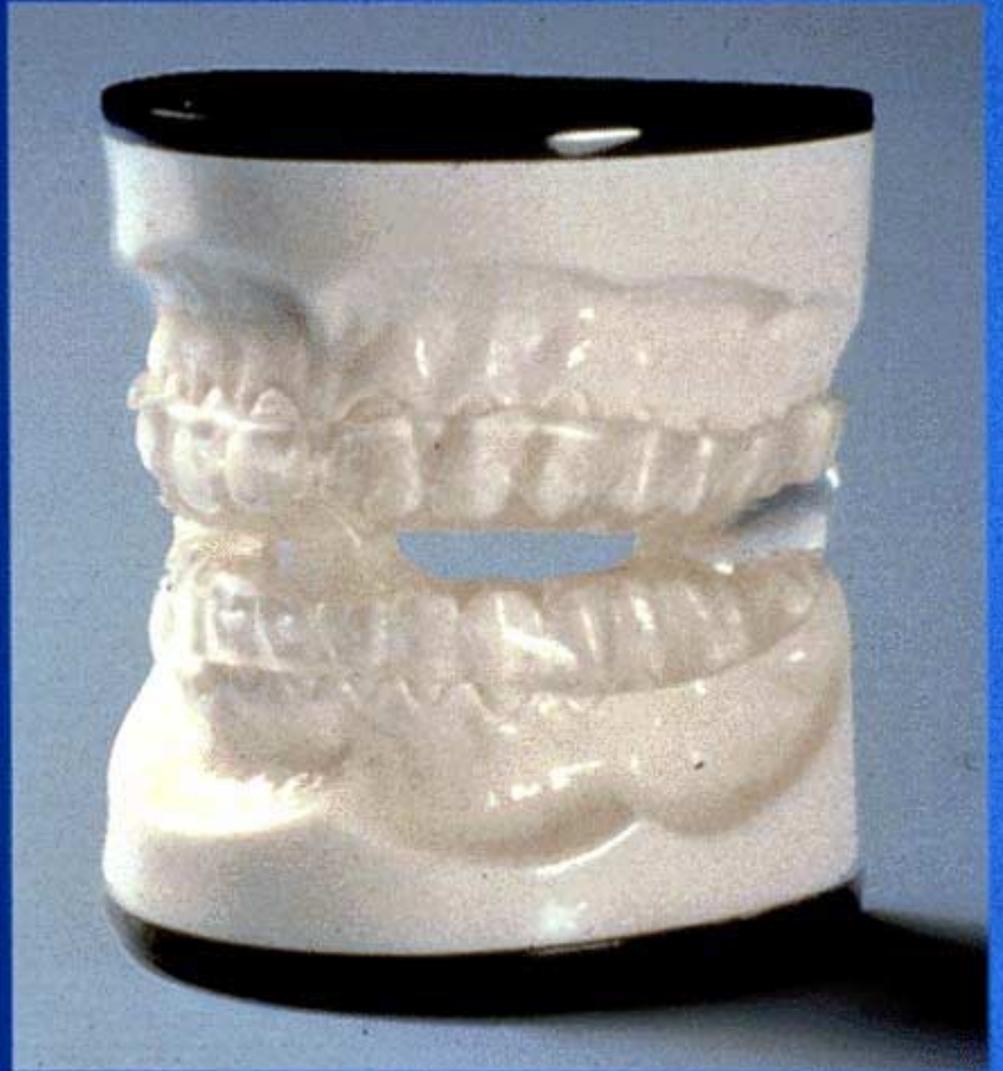
Close up of NAPA appliance



B20

NAPA appliance in the mouth

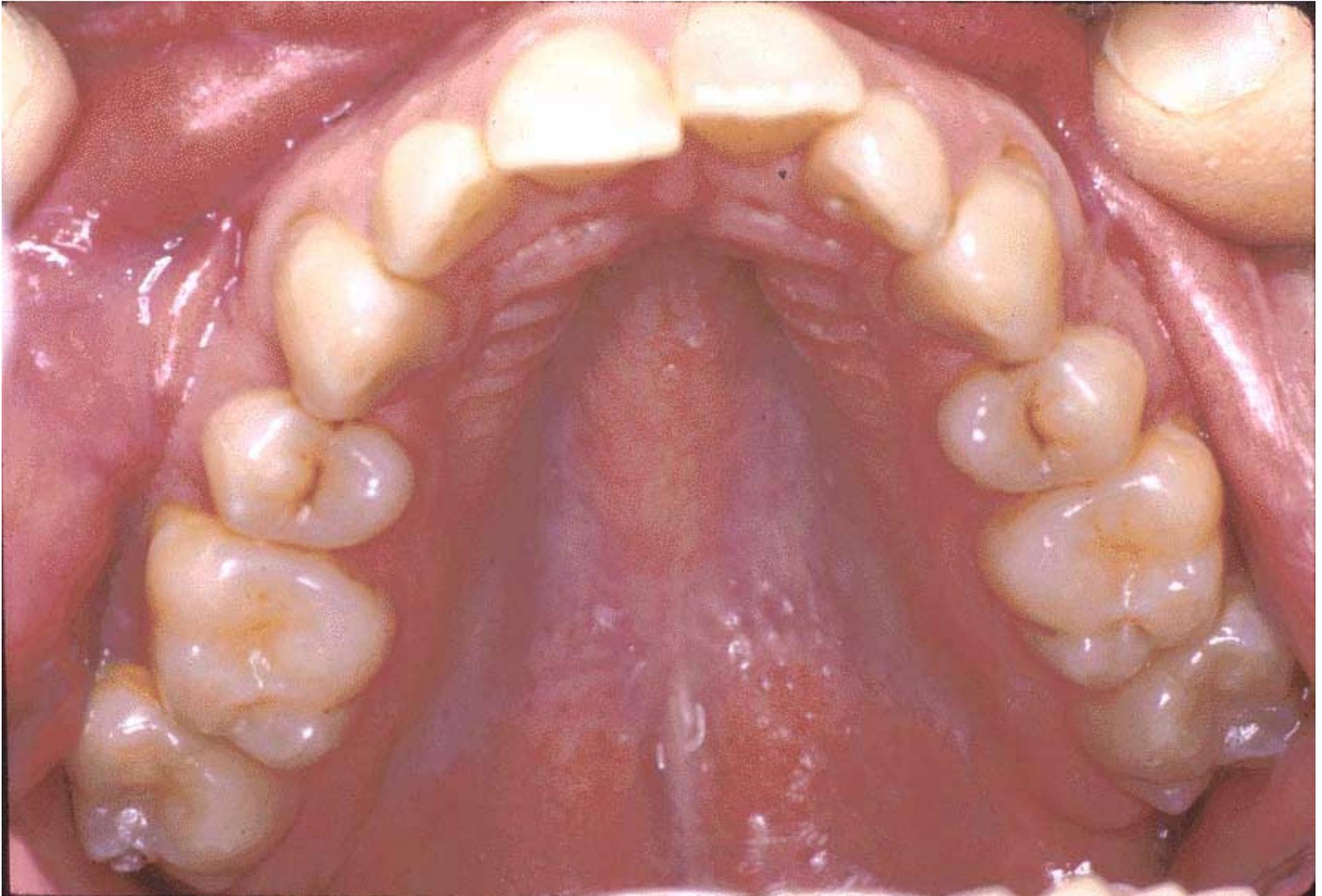
**PARKER  
MANDIBULAR  
POSITIONER  
(PM POSITIONER)**



B21 Appliance developed by Dr. Jonathan Parker



B22 Crossbite on both sides indicates a narrow dental arch

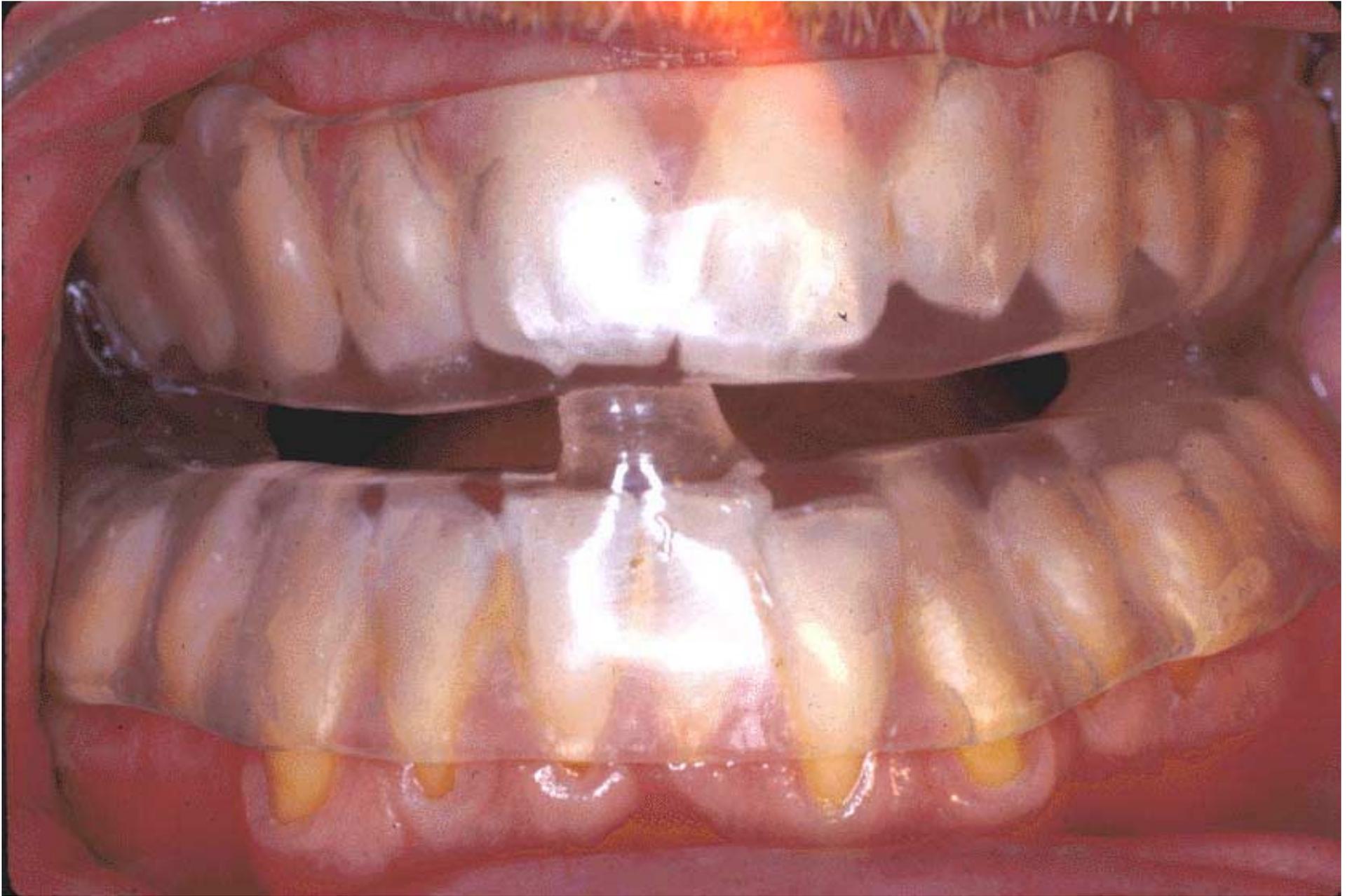


B23 High palate and narrow arch - 1st bicuspids missing



B24

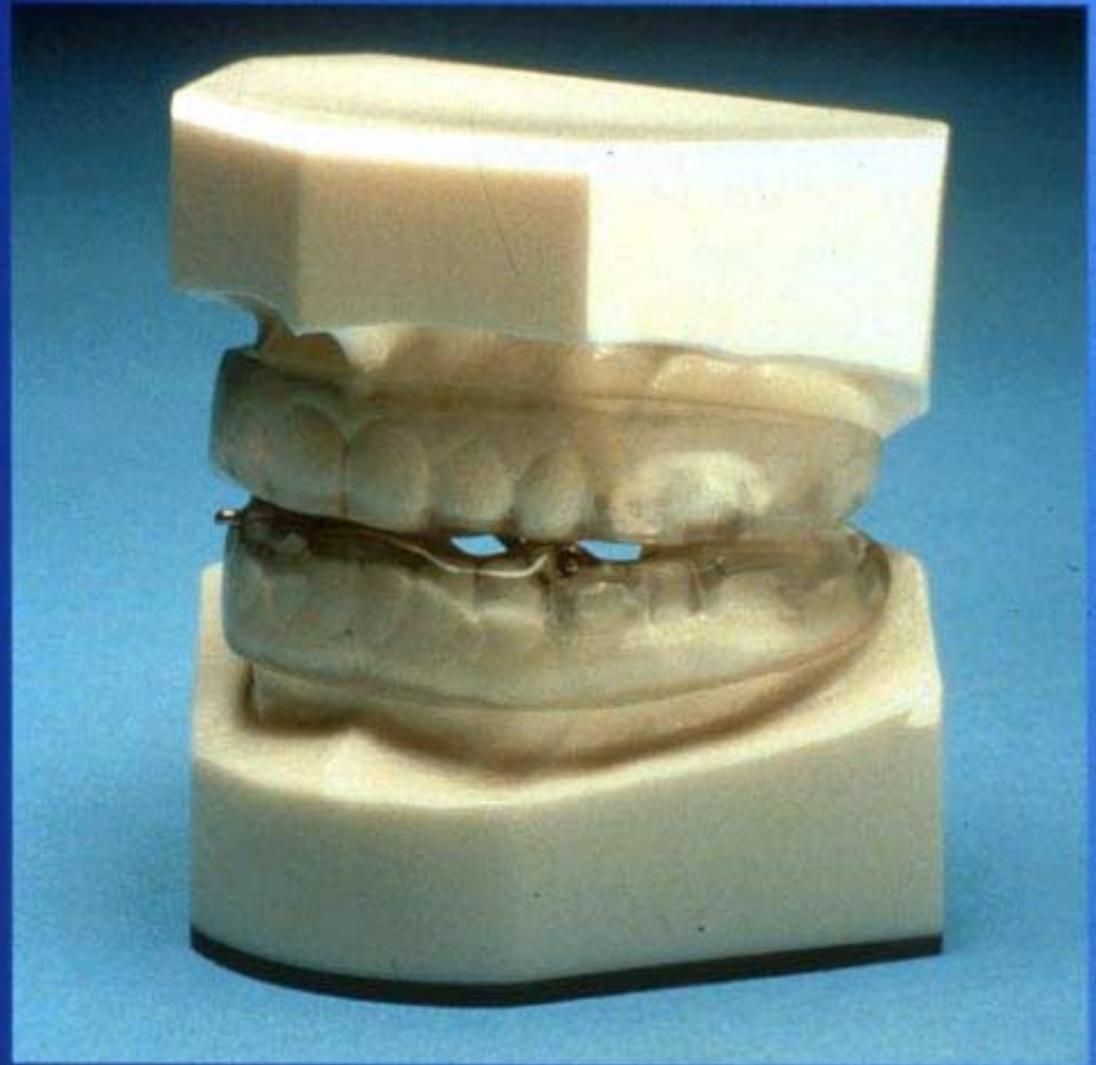
PM Positioner on models



B25

PM Positioner in mouth

# KLEARWAY



B26 Appliance developed by Dr. Alan Lowe



B27

Klearway appliance



B28

Back view of Klearway appliance



B29

Klearway appliance in mouth

# TAP Appliance

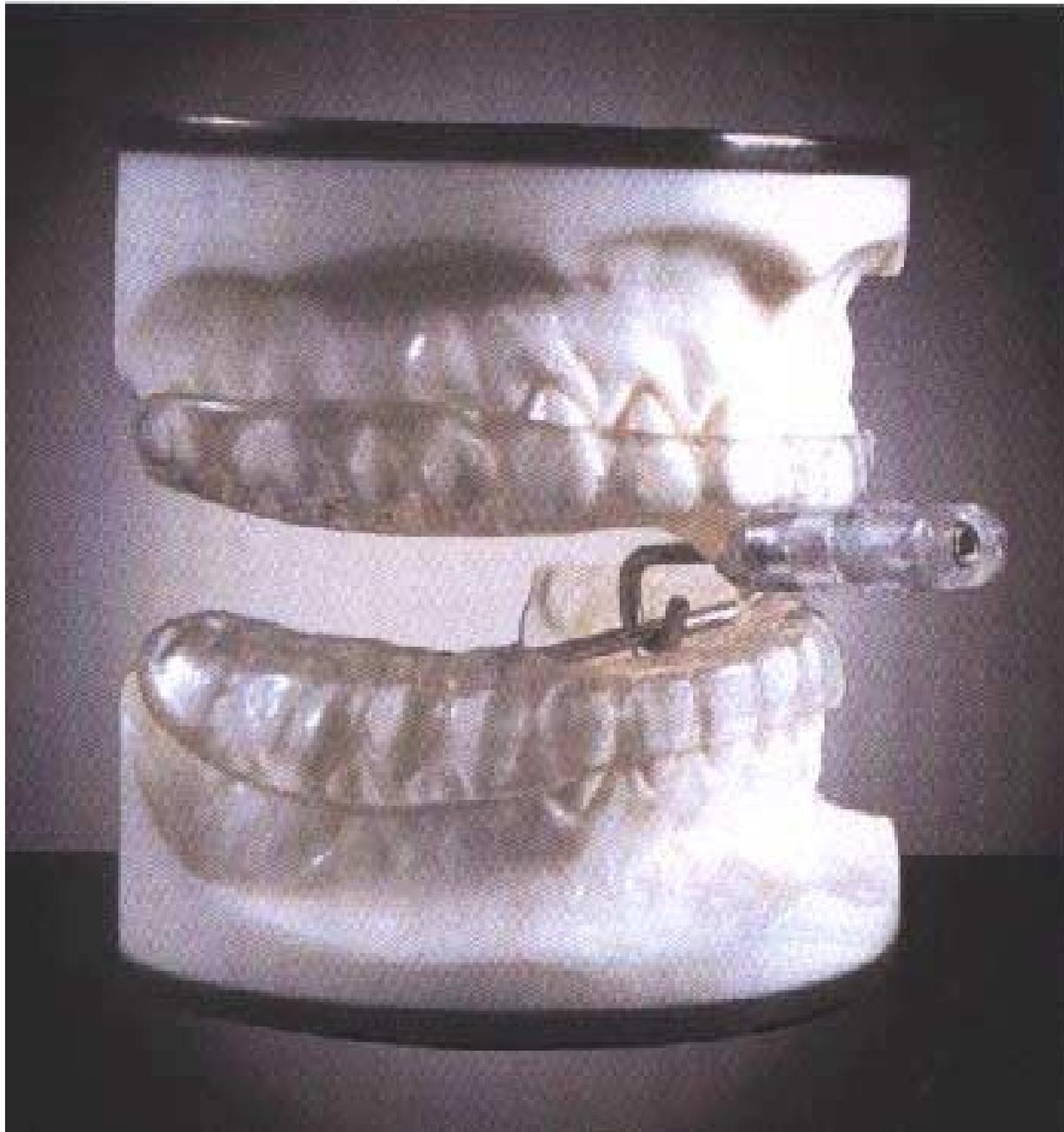
Appliance developed  
by Dr. Keith Thornton



B31 One of the early versions of the TAP appliance



B32 Another early TAP using 100# test fishing line.



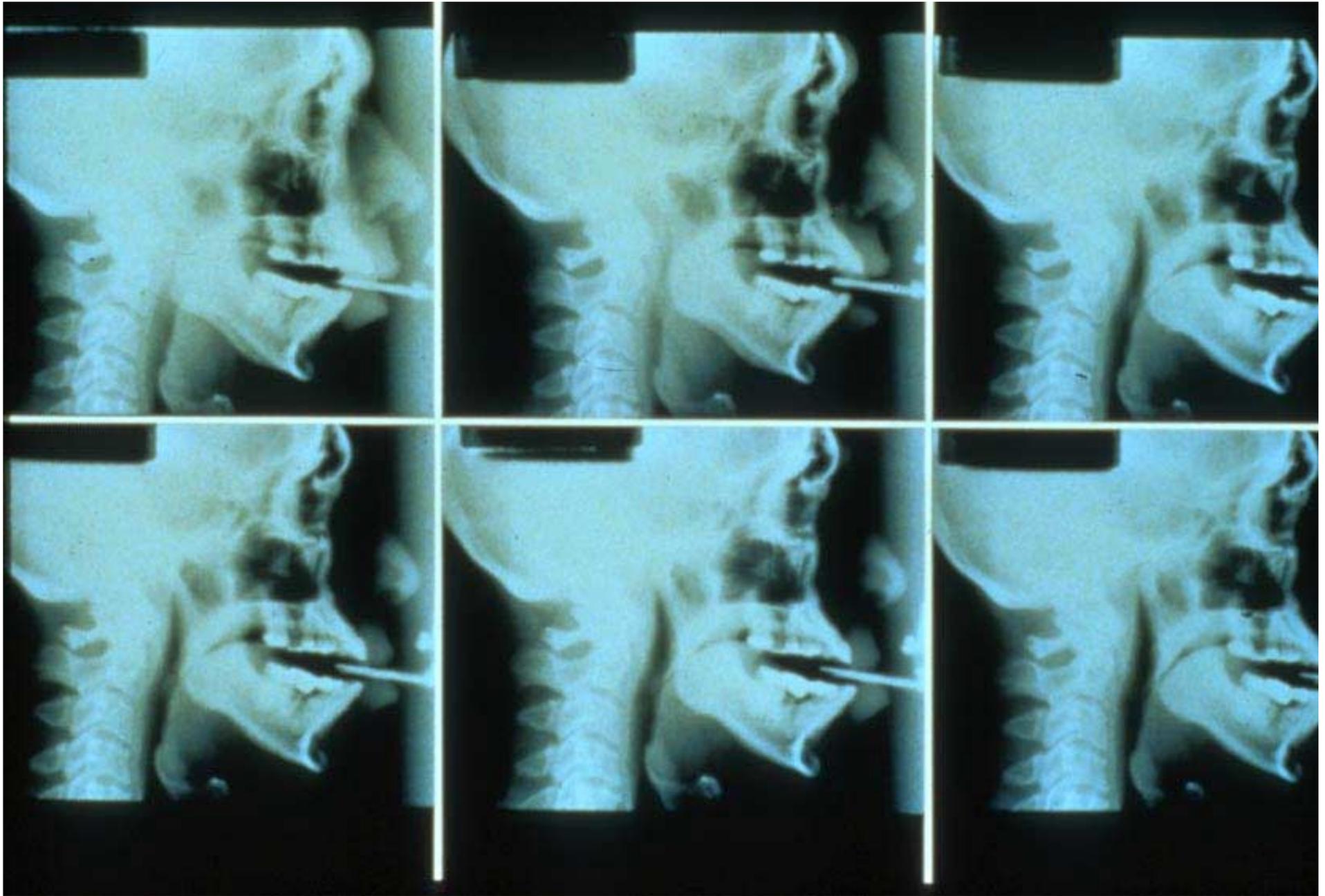
B33

2001 version of TAP appliance



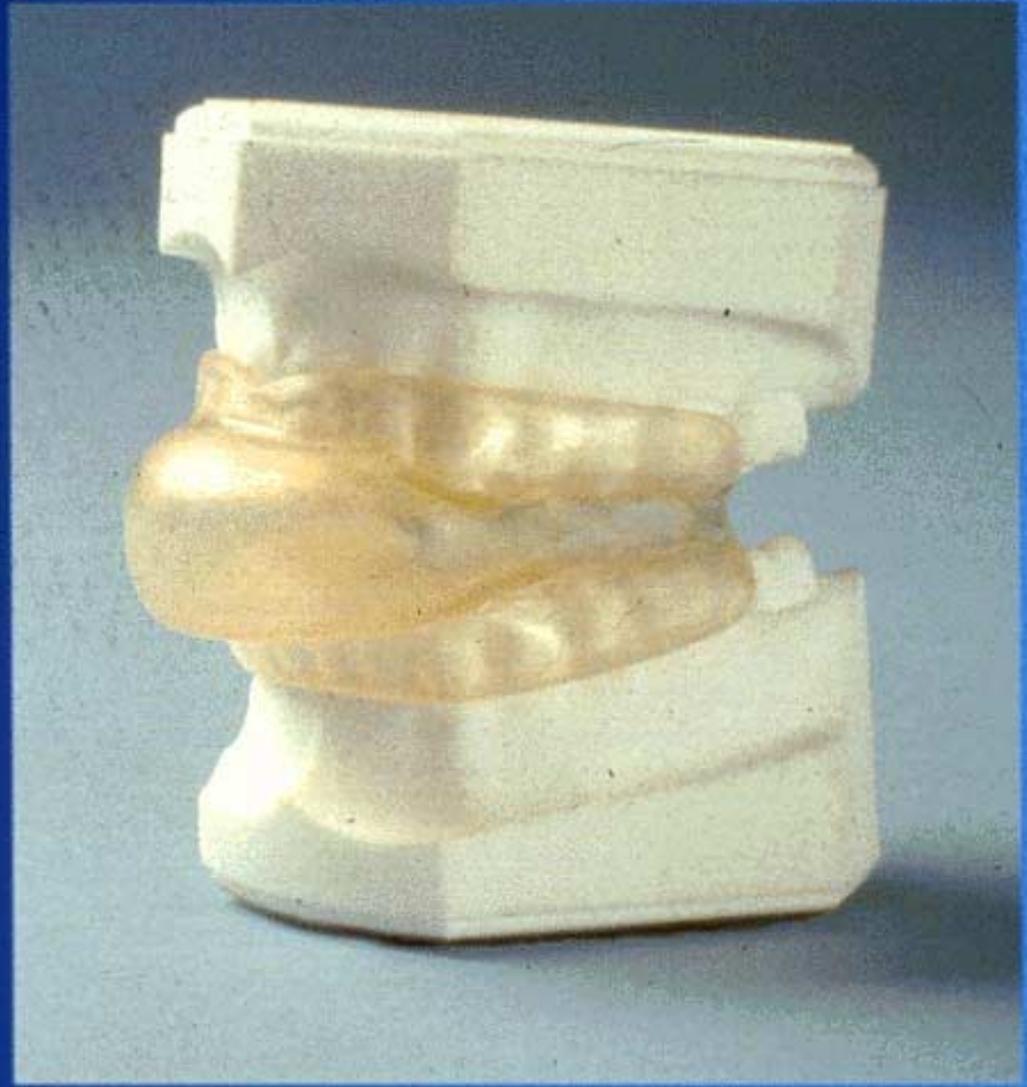
CPAP inter face  
with TAP  
appliance

B34



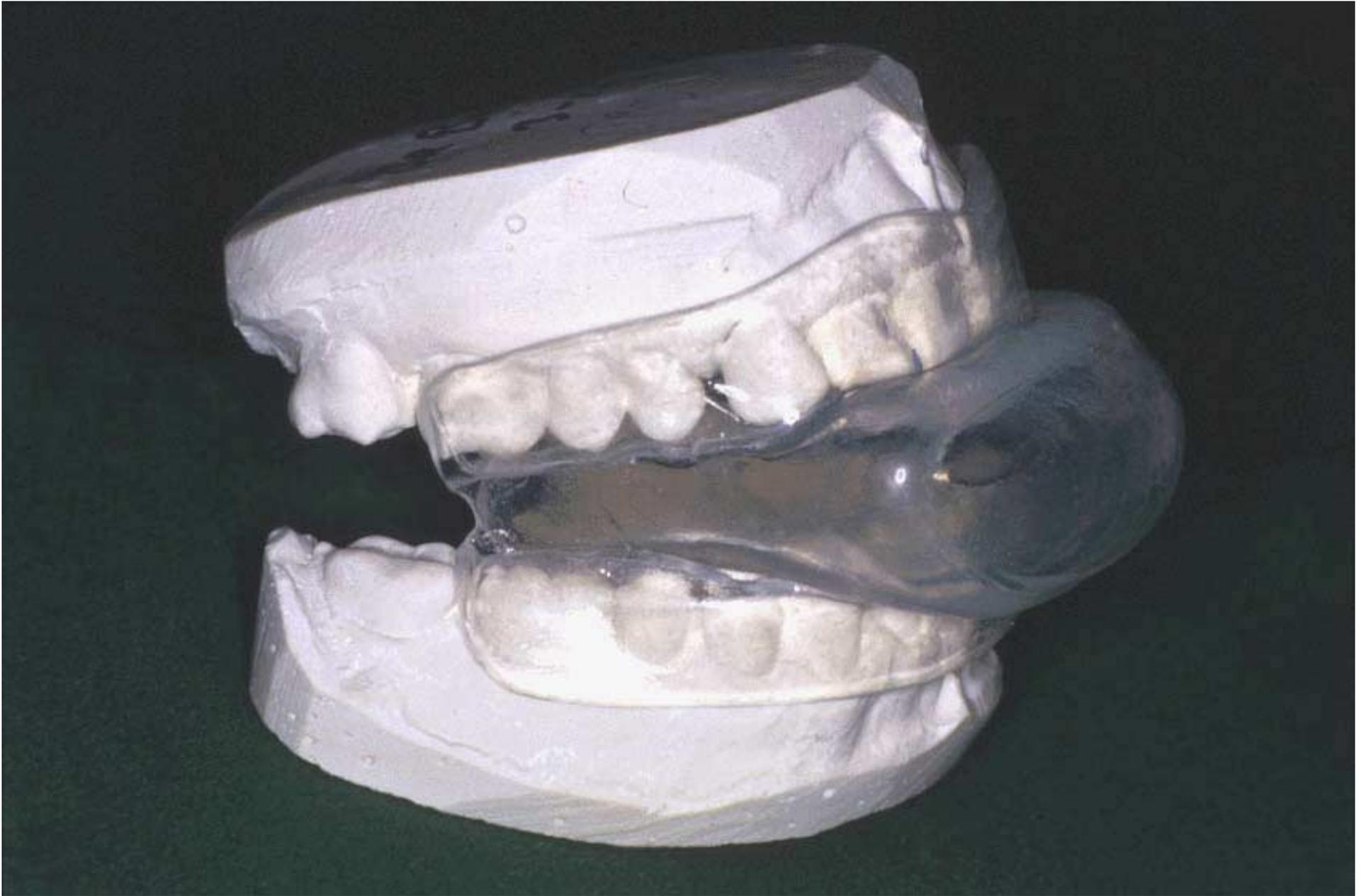
**B35** Opening of airway as mandible advanced with TAP

**TONGUE  
RETAINING  
DEVICE  
(TRD)**



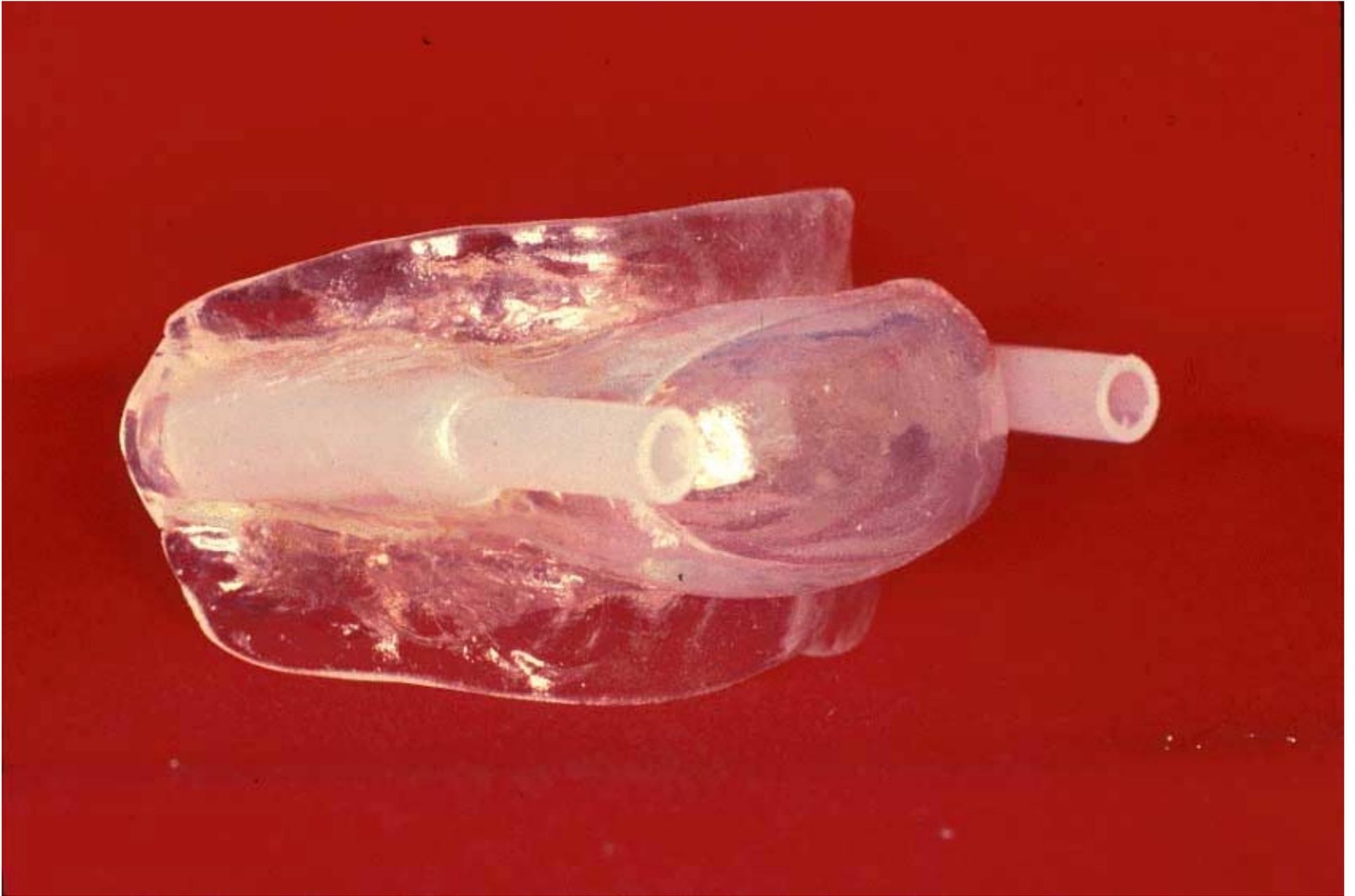
SDS

B36 Appliance developed by Drs. Samelson & Alvarez



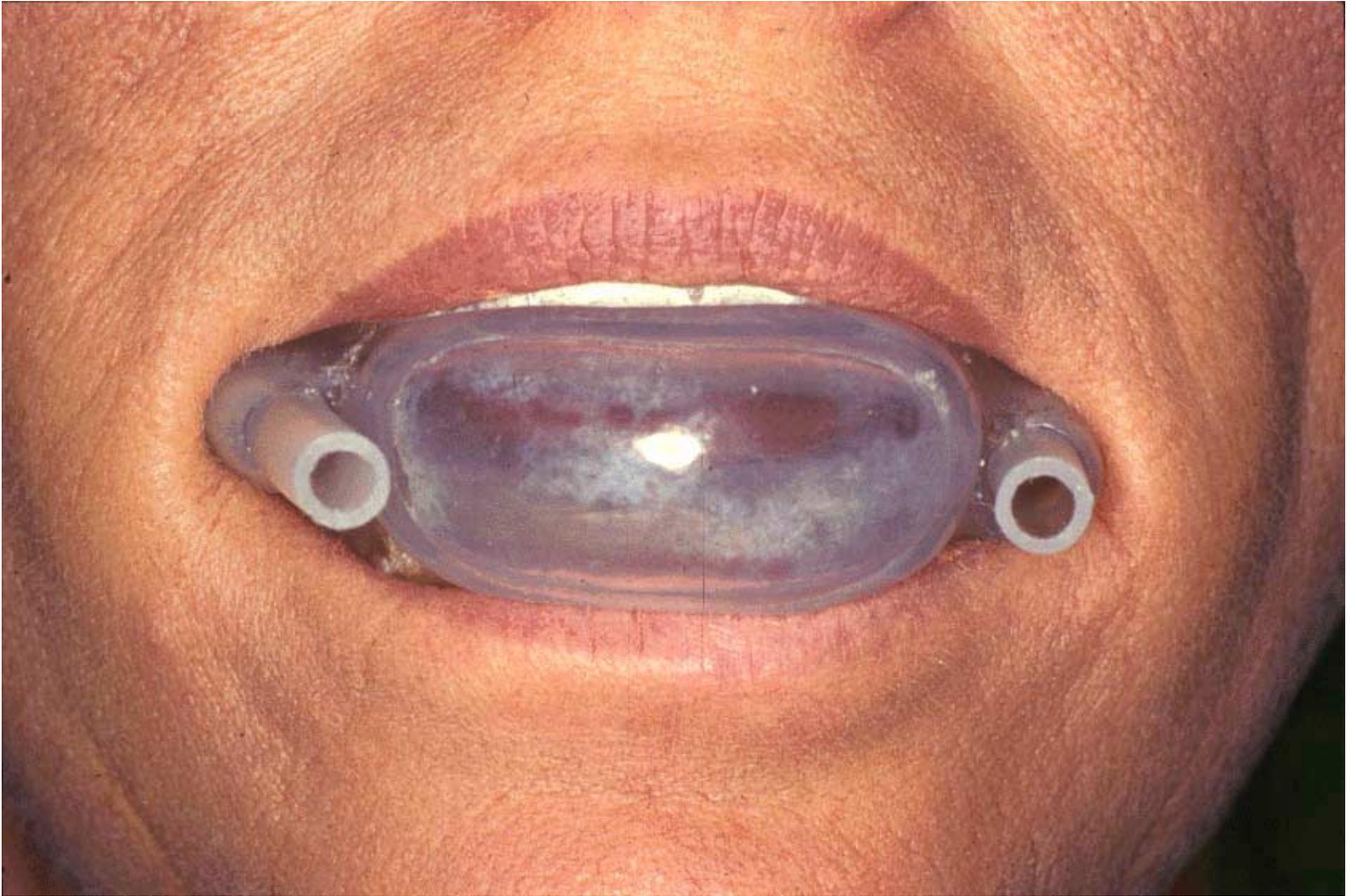
B37

TRD on models



B38

TRD with breathing tubes added



B39

TRD in mouth



B40

TRD with air tubes blocked



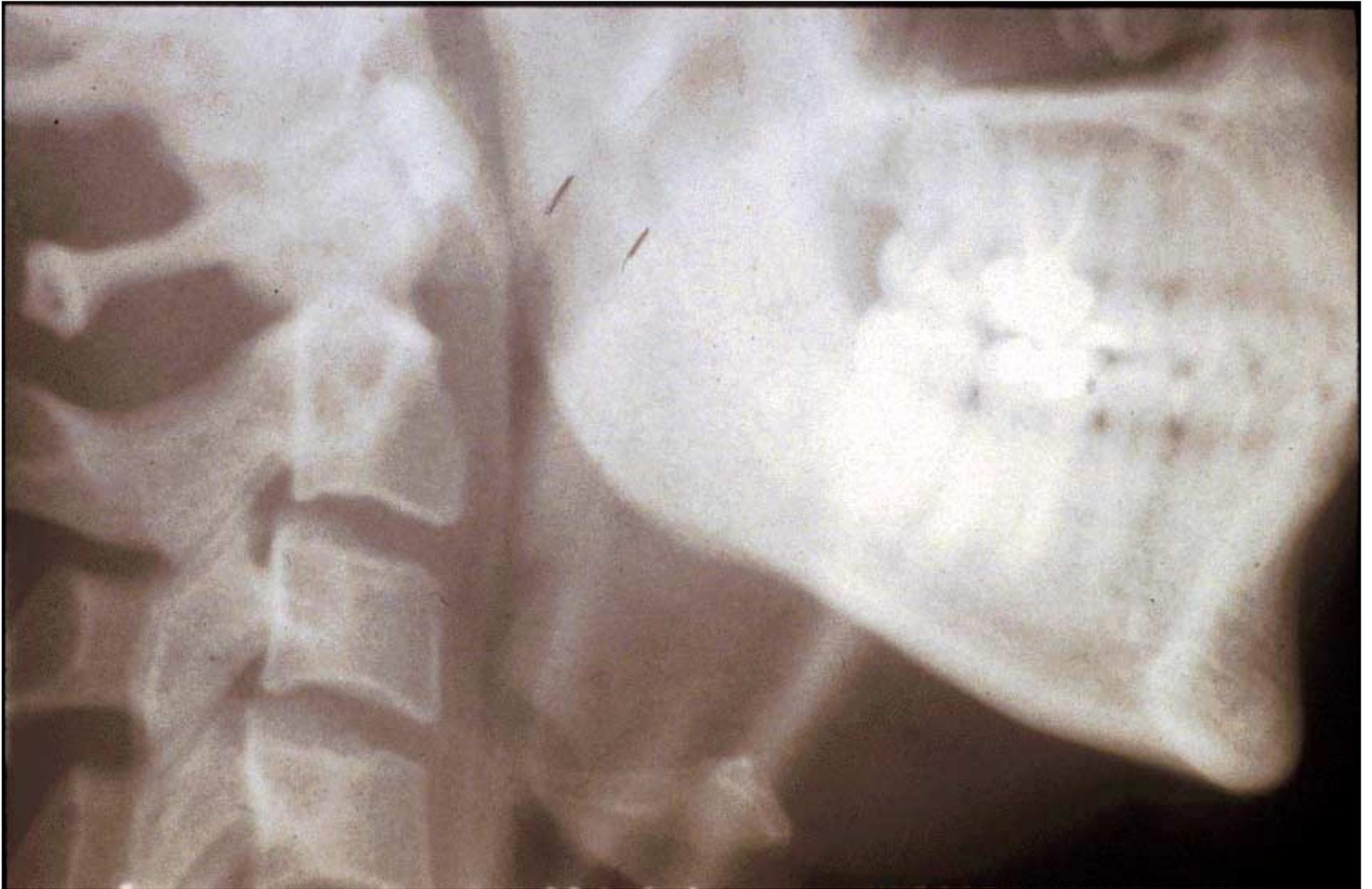
B41

TRD, head gear and CPAP



B42

TRD and oxygen



B43

Ceph without TRD



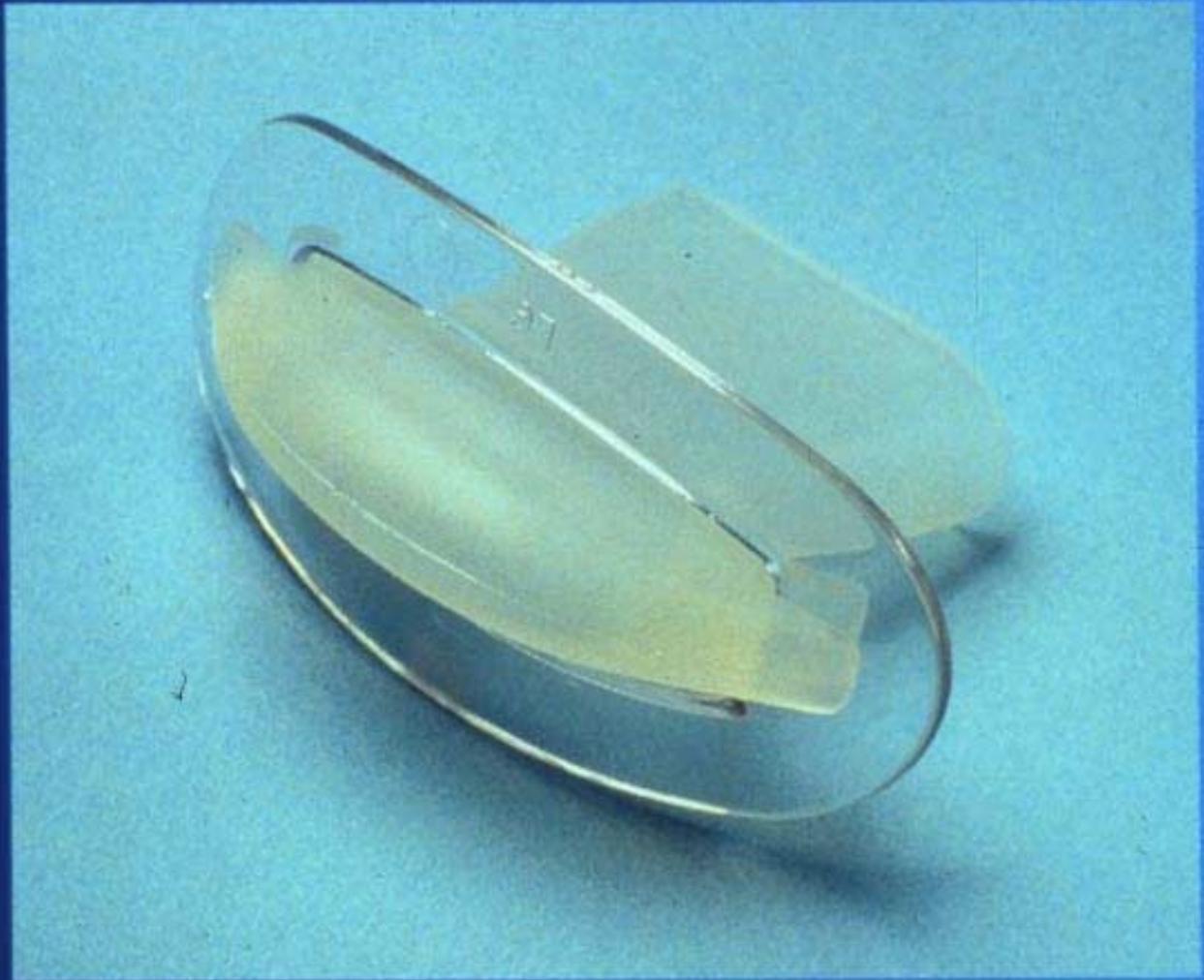
B44 Improvement of airway space using TRD



B45

Pets love to chew up appliances!

**SNOR-X**



B46 Appliance developed by Dr. Michael Alvarez



B47

Snor-X



B48

Snor-X in mouth

## Appliances are best if:

- Person is not over 125% of normal body weight.
- Apneic episodes are not over 30 per hour.
- Oxygen saturation is not less than 80%.

# Factors that reduce success:

- Obesity
- Severe OSA
- Bruxing
- TMJ symptoms
- Poor compliance / attitude
- Claustrophobia / gaggers

## Possible side effects:

- Salivation
- Temporary change of bite in AM
- Change in occlusion / bite
- TMJ discomfort or dysfunction
- Gagging
- Dry mouth
- Can pull crowns and bridges off

## Possibly cannot help:

- Extremely obese individuals
- Unmotivated individuals
- Heavy drinkers
- Strong gaggers
- Individuals with psychological problems
- Individuals who have night mares

Brian Palmer, D.D.S.  
Kansas City, Missouri, USA  
May, 2001