SPACE MAINTAINERS LABORATORIES

TIPS AND TECHNIQUES

INTEGRATING APPLIANCE THERAPY INTO YOUR PRACTICE

DR. ROB W. VEIS, D.D.S.

Written exclusively for dentists.
Designated for one CE Contact Hour.

OVERVIEW

Simple, early interceptive orthodontic treatment can prevent serious orthodontic complications…and correcting habits can prevent serious malocclusion. Appliances have been employed in every aspect of patient care and treatment -- from early mixed-dentition years to the later years when periodontal disease and apnea may often become major concerns.

As a general dentist, you have the ability to help your patients at every stage of their lives. Appliance therapy can make you a better dentist – in every sense of the word.

EDUCATIONAL OBJECTIVES

The overall objective of this course is to provide the participant with an evidence-based guide to appliance therapy and treatment. From ensuring normal growth and development to improving adult aesthetics to actually saving lives, it will cover the full spectrum of care essentials and economics, showing how doctors can easily integrate appliance therapy into their practice.

UPON COMPLETING THIS COURSE, PARTICIPANTS WILL BE ABLE TO:

- Understand the importance of Appliance Therapy and how to use it to treat early, simply, easily and with fast, predictable results.
- Appreciate new techniques in appliance therapy for creating and maintaining space; eliminating habits that can cause serious malocclusion; controlling periodontal disease; correcting overlapping incisors prior to placement of porcelain veneers; designing, adjusting and modifying simple fixed and removable appliances.
- Recognize the importance of presenting realistic alternatives to patients who do not want comprehensive orthodontic treatment (+2 years).



About the Author:
ROB VEIS, DDS.

Dr. Veis began practicing in 1984 as a solo general dentist and has been a part of both solo and group practices since then.

A graduate of USC Dental School, he taught for 12 years at the University of Southern California as a Clinical Professor in Restorative Dentistry; is an internationally renowned lecturer (at locations including UNLV, Columbia University, Loma Linda University and NYU) on the topics of Dental Sleep Medicine, Orthodontics for the General Practice and Appliance Therapy; and has served on the faculty of the Las Vegas Institute of Advanced Dental Studies.

He is the co-author of The Principles of Appliance Therapy for Adults and Children – considered one of the definitive texts on the subject – and has lectured extensively for the Academy of General Dentistry-sponsored mastership program.

AUTHOR DISCLOSURE:

Dr. Veis discloses that he is the CEO of SML™ Space Maintainers Laboratories.

Provider: This is a continuing education activity of SML.
Education: This course has been made possible without commercial support as a service of SML.
Educational Methods: This course is self-instructed, journal based activity.
Registration: This course is provided at no cost, for 1 CE Contact Hour.
Publication Date: Original Release Date: 2005. Reviewed 2013, EXPIRATION DATE: December, 2016.
Requirements for Successful Completion: To obtain 1 CE Credit Hour for this educational activity, read and review the material, complete the course evaluation and earn a score of at least 70% on the post test.
Authenticity Statement: The images in this course have not been altered.
Scientific Integrity Statement: Information shared in this continuing education activity is developed from clinical research and represents the most current information available from evidence-based dentistry.
Known Benefits and Limitations: Information in this continuing education activity is derived from data and information obtained from the reference section.
Educational Disclaimer: Completing a single continuing education course does not provide enough information to result in the participant being an expert in the field related to the course.
Provider Disclosure: SML is a commercial entity. No manufacturer or third party has had any input into the development of course content. The content of this course has been independently reviewed to assure that no commercial bias is present.
CE Planner Disclosure: The planner of this course, Steve Gross, discloses that he is Executive Director of SML Education.
Target Audience: This course was written for dentists, dental hygienists, and assistants -- from novice to skilled.
Please direct all CE questions to SML 9139 Lurline Ave. Chatsworth CA 91311 ; 1-800-423-3270.

ADA C·E·R·P® | Continuing Education Recognition Program

Academy of General Dentistry PACE Program Approval for Continuing Education

DEFINITIONS:

The term “appliance therapy” today refers to the use of a wide variety of dental appliances in every phase of a patient’s treatment – from simple space maintainers and Hawleys to those appliances used in connection with placing implants, performing periodontal surgery or doing interceptive orthodontics.

In this course, I would like to share with you some clinical instances which demonstrate many of the innovative ways that appliances are being used.

The advantages of integrating appliance therapy into your practice are:

- **Increased communication between treating doctors**
- **Better comprehensive patient care**
- **Increased referrals**

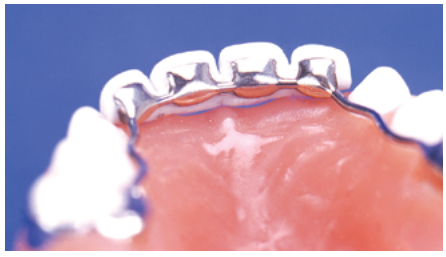
INDICATIONS:

INTERCEPTIVE ORTHODONTICS for Children

Simple Space Maintenance

Pediatric space management is often the key to preventing a serious malocclusion in the permanent dentition. The early loss of primary teeth can result in a reduction of arch length directly affecting the later eruption of the adult teeth.







(Treatment by Dr. Ron Singer)

The early loss of a tooth is usually due to dental caries or trauma and if space loss has not already occurred, rapid intervention with a space maintaining appliance is of utmost importance. If space loss has already occurred, a space regaining device should be considered.

Our clinical case exemplifies the premature loss of anterior teeth due to Baby Bottle Syndrome. On the day of the extraction the doctor delivered a Groper Fixed Anterior Bridge. Esthetics and strength are the key advantages to this popular design. The esthetics is accomplished because the teeth are now made with a non staining composite instead of plastic. This allows you to characterize them and repair them when necessary.

The anterior bridge is made extra strong by attaching each tooth separately to a specially designed, stainless steel pad (a Space Maintainers exclusive). Each unit is then laser-welded to the arch wire. As you can see, within a week the tissue is healed and the patient is able to maintain normal speech, function, and esthetics.

Cross-Bite Correction

It is essential to treat a cross-bite in the primary and mixed dentition. Allowing this malocclusion to continue into the permanent dentition without correction can lead to: occlusal trauma, enamel abrasion or fractures of the teeth, the development of abnormal chewing and swallowing problems, abnormal growth of the maxilla and the mandible, the development of a permanent dentofacial abnormality and temporomandibular joint dysfunction.[3,4,5]

Many methods have been used to correct crossbites. These range from the use of an acrylic incline plane for a simple anterior crossbite to a rapid palatal expander for a severe posterior crossbite.



Eight-year-old girl exhibiting both an anterior and a posterior cross-bite. Upper device used was a modified expansion appliance. Turning the central screw once a week allowed for bilateral arch development. Posterior occlusal coverage used to remove any inhibition to tooth movement. Recurved fingerspring used to move the central out of the anterior crossbite. Correction of the crossbites completed in four months.

MINOR TOOTH MOVEMENT for Adults

Most adults are unwilling to undergo complete orthodontic care. Yet many of them would love to do something to improve the way their teeth look. Fortunately, there are minor tooth movement procedures to give your patients the esthetic results they want.







A typical example of adult minor tooth movement is illustrated above. This patient has overlapping centrals and two peg laterals that are lingually placed. After a diagnostic wax up was completed, it became clear that the patient had two choices. He could either have his teeth prepared for four crowns or he could undergo some minor tooth movement followed by the placement of six veneers. The patient chose the less invasive procedure.

In this case the orthodontics was completed by using a simple Hawley retainer with distal kickers and finger springs.

PERIODONTAL CARE

As of today the majority of adults in the United States have some form of Periodontal disease ranging from gingivitis to moderate periodontal disease, with up to 15% of them actually suffering from advanced periodontal disease.

Briefly, the Perio Protect method uses custom trays prescribed by you and made by a lab registered with the FDA. The trays have a special patented seal that directs antimicrobial agents into the gingival sulcus and these specially designed and custom fabricated trays maintain the medications there long enough to kill the bacteria.

SPLINT THERAPY

Splints can be used to achieve a variety of objectives in the general practice. Bruxism splints are used to prevent excessive tooth wear, tooth mobility, and loss of tissue attachment. Stabilization splints are used after periodontal surgery to distribute forces, decrease trauma, and aid in the healing process.[7] They are also used in orthodontics as a form of final stabilization.[7] Patients with TMJ dysfunction, i.e. patients who suffer from local (neck, shoulder, or sinus) pain, clicking in the joints, pronounced malocclusion, impaired excursion in opening of the mouth or deviant motions of the jaw, are also regularly treated with splint therapy.

Splints come in a variety of designs. Traditionally, they have been made from a hard acrylic material. The hard acrylic splints provide the patient with an adjustable occlusal surface but usually require substantial chair time to make the appliance fit comfortably. Some practitioners have offered their patients soft splints made out of a mouthguard material in an effort to make them more comfortable for the patients. Unfortunately these materials do not lend themselves to adjustment and repair and actually encourage bruxism.

SLEEP APNEA

In obstructive sleep apnea, the muscles of the oropharynx, hypopharynx, and tongue relax and sag, obstructing the airway and making breathing labored and noisy.[8] Collapse of the airway walls blocks breathing entirely. When breathing stops, a listener hears the snoring broken by pauses. As pressure to breathe builds, muscles of the diaphragm and chest work harder eventually uncorking the airway. The effort is akin to sipping a drink through a floppy straw. With each gasp, the sleeper awakens but so briefly and incompletely that he/she usually does not remember doing so in the morning.[8]

Because the etiology of obstructive sleep apnea is multifactorial and the treatment options are varied, proper diagnosis and treatment are best handled by a team approach. Members of this team may include a Sleep Specialist, an ENT, an internist, a speech pathologist, an orthodontist, an oral surgeon, and a general dentist.

As a general dentist, you should play an active role in all three stages of apnea therapy: screening, diagnosis, and treatment.

Research has shown that many appliances are quite effective in treating snoring and obstructive sleep apnea. In fact, sleep appliances offer several advantages over other therapy choices. They are inexpensive, non-invasive, easy to fabricate, reversible, and quite well accepted by patients.



(from left to right, top to bottom):
Dorsal, Sleep-Well, Full Breath, Zyppah-V, ASA

Sleep appliances seem to work in one or a combination of three ways. They either 1) change the position of the soft palate, 2) impact tongue position directly or 3) alter mandibular position causing a change in tongue position. Some of the newer appliances are considered "Hybrid" devices because they achieve both of the latter two functions simultaneously.

An excellent protocol for the use of dental appliances has been established by the American Academy of Dental Sleep Medicine. We highly recommend that you follow their guidelines.[9]

TEMPORARY PARTIALS

Temporary removable partial dentures serve many useful purposes and are an integral part of any prosthodontic treatment plan.[10] These appliances are classified according to the purpose for which they are used. The three types of temporary removable partial dentures are the interim, transitional, and treatment partial.[10]

An **interim partial** is used to:

1. Maintain space
2. Re-establish occlusion
3. Replace visible missing teeth while definitive restorative procedures are being accomplished
4. Serve the patient while he is undergoing periodontal or other prolonged treatment[10]
5. Condition the patient to wearing a removable prosthesis
6. When healing is progressing after an extraction or a traumatic injury
7. Maintain function while accomplishing minor tooth movement

The **transitional partial** denture is planned when some or all of the remaining teeth are beyond the point of restoration but immediate extractions are not indicated for physiologic or psychological reasons.[11]

The **treatment partial** denture may be used as a vehicle to carry tissue treatment material to abused oral tissue, as a splint following surgical corrections in the oral cavity and to increase or restore the vertical dimension of occlusion on a temporary basis while the results of the increase can be observed.[14]

TREATMENT PROCEDURES:

As always, proper appliance selection and application requires a well thought-out and thorough diagnosis and treatment plan. This is especially true when you are dealing with a compromised dentition.

Your diagnostic records should consist of the following:

1. A complete medical and dental history
2. A thorough clinical exam, including:
   - An oral cancer screening
   - Documentation of any abnormalities in the oral mucosa and gingiva
   - Radiographic evaluation of all necessary films (FMX, PAN, CEPH, TMJ)
   - Charting of all existing restorations and carious lesions
   - A thorough periodontal evaluation
   - An occlusal analysis
   - A TMJ evaluation

As a general rule, all caries and necessary restorative work should be completed before impressions are taken for appliance.

Patients should be checked after the first week of wearing appliances.

TMJ patients should have a complete TMJ work up. Radiographic techniques such as a transcranial or a tomogram should be used for the purpose of confirming your clinical diagnosis.

Upon delivery of the appliance, perform any needed occlusal adjustments.

Discuss with the patient how to insert, remove, and care for the appliance.

APPLIANCE CARE:

Fixed Appliances:

Whether your patient is undergoing complete fixed orthodontics, is having anteriors splinted with a Maryland splint, or space maintained with an interim bridge, all fixed appliances will demand special oral hygience care.

Removable Appliances:

- Never allow the appliance near high temperatures.
- All appliances should be kept in a retainer case.
- All appliances should be cleaned every day. All that is needed is a soft brush and toothpaste or a soaking in an appropriate cleaning solution.

Removal of the appliance is best accomplished by using equal pressure on both sides of the mouth. This minimizes the chance of damage to the resilient portion of the appliance.

LAB REQUIREMENTS:

Space Maintainers' goal is to give you the best service possible. To help us get your lab work back to you on time, we need the following:

1. A detailed prescription.
2. The date wanted and the patient's appointment date.
3. Accurate casts poured in stone that capture all the teeth and land areas. Air bubbles or holes on tooth surfaces are unacceptable as they can negatively affect the fit of the appliance.
4. Provide a carefully taken construction bite that represents the exact vertical and AP position that you desire in the finished appliance.

CONTRA INDICATIONS AND CONCERNS:

Careful diagnosis and treatment planning are the key elements to success. Before becoming involved in treatment, the patient should be informed of the total treatment required — including periodontal, orthodontic and prosthetic therapy. And for appliance therapy to work, all caregivers must work closely together.

REFERENCES:

1. *Marks, Corn: Atlas of Adult Orthodontics, Philadelphia, Lea & Febiger, 1989. Chapter 19, pp 413-447.*
2. *Franzetti, J.1.: Periodontal Considerations and Guidelines for Therapy. Dental Clinics of North America, Vol. 29, No. 1, Jan 1985.pp 17-38.3. Graber, Orthodontics: Principals and Practice, Ch 17, pp 833-847, Philadelphia: W.B. Sounders Co., 1972.*
3. *Major, Glover: Treatment of Anterior Crossbites in the Early Mixed Dentition, Journal of Pedodontics, July 1992, Vol. 58, No 7, pp 574-579*
4. *Payne, Mueller, Thomas: Anterior Crossbites in the Primary Dentition, The Journal of Pedodontics, Summer, 1981, pp281-291*
5. *Croll, Fixed Incline Plane Correction of Anterior Crossbite of the Primary Dentition, The Journal of Pedodontics, Vol. 9: 84, 1984, pp 84-94*
6. *Space Maintainers Laboratory: Manual of Orthodontic and Pedodontic Appliances, 1990. Technical Bulletin - The Taking of a Proper Construction Bite.*
7. *Marks, Corn: Atlas of Adult Orthodontics, Philadelphia, Lea & Febiger, 1989. Chapter 5, pp 147-159.*
8. *Lamberg, L.: Sleep Apnea Symptoms, Causes, Evaluation, Treatment. Rochester, MN, Amer¬can Sleep Apnea Disorders Association, 1988.*
9. *Clinical Protocol for Dental Appliance Therapy for Snoring and Obstructive Sleep Apnea, Academy of Dental Sleep Medicine, One Westbrook Corporate Center, Suite 920, Westchester, IL 60154.*
10. *Henderson, D.: McCracken's Removable Partial Prosthodontics, 6th Edition, C.V. Mosby Co., St. Louis, 1981, pp 418-422.*
11. *Stewart, K.: Clinical Removable Partial Prosthodontics, C.V. Mosby Co, St. Louis, 1993, pp 536-572.*
12. *Marks, Corn: Atlas of Adult Orthodontics, Philadelphia, Lea & Febiger, 1989. Chapter 18, pp 391-412.*

GO TO: COURSE EXAMINATION

@

SMLglobal.com/Appliance-Therapy-CE-for-Free

(Click Above)

CONTENT STATEMENT

All content has been derived from the references listed. Please direct all questions to the program director: 9139 Lurline Avenue, Chatsworth, CA 91311, or e-mail SteveG@SMLglobal.com.

COURSE CREDITS

All participants scoring at least 70% on the examination will receive verification on 1 CE Credit.

EDUCATIONAL DISCLAIMER

The information presented here is for educational purposes only. It may not be possible to present all information required to utilize or apply this knowledge to practice. It is therefore recommended that additional knowledge be sought before attempting a new procedure or incorporating a new technique or therapy. The opinions of efficacy or the perceived value of any products or companies mentioned in this course and expressed herein are those of the author(s) of the courses and do not necessarily reflect those of SML.

RECORD KEEPING

SML maintains records of your successful completion of any exam. Please contact our offices for a copy of your continuing education credits report. This report, which lists all credits earned to date, will be generated and mailed to you within five business days of receipt of your request.

COURSE EVALUATION

We encourage participant feedback pertaining to all courses. Please be sure to complete the survey included within the answer sheet.

No part of this Continuing Education Course may be reproduced for commercial purposes in any form without permission in writing from the copyright owner.

© 2015 SML. All rights reserved.

This Continuing Education course is a special service of SML and is produced solely for the private use of our clients. It is designed to help expand and enhance your ability to provide comprehensive patient care. Information included is the opinion of the author and may not be reproduced in any form without written consent.

INTERGRATING APPLIANCE THERAPY is one of the many offered SML Continuing Education Courses. For a complete catalog of Self-Directed Courses please visit

www.SMLglobal.com

SML™

SPACE MAINTAINERS LABORATORIES

9129 Lurline Ave.
Chatsworth CA 91311
(800) 423-3270

Regional Space Maintainers Labs:

Southwest	800-423-3270
Northwest	800-423-6509
Northeast	866-310-5800
Southeast	800-289-0118
Midwest	866-554-8541
Canada	800-661-1169
Australia	03-9521-0299
Malaysia	03-621-8599
Taiwan	886-7-235-5612