

Dr. Steven Buckley has no relevant financial relationships with commercial interest to disclose.

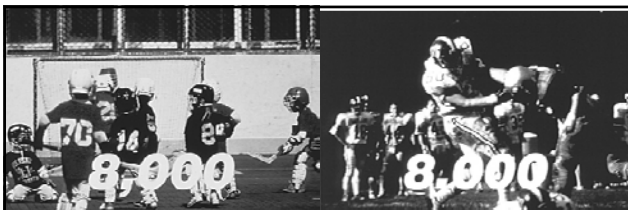
STEVEN B. BUCKLEY, DDS, MD
Alamo Maxillofacial Surgical
Associates, PA

**ON THE FIELD
ORAL AND FACIAL
EMERGENCIES**

**CHILDREN &
ADOLESCENTS**

■ 10 Out of Every 100 Will
Suffer a Sports Related
Injury

**Incidence of
Oral and Facial Injuries**







COST OF FACIAL INJURIES IN SPORTS

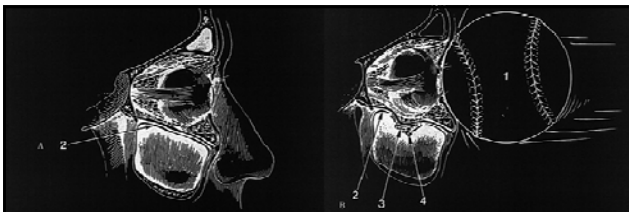
■49 MILLION PER YEAR

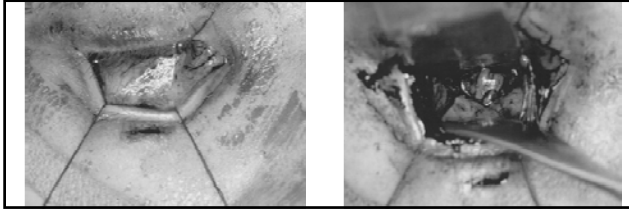
INCIDENCE OF INJURIES

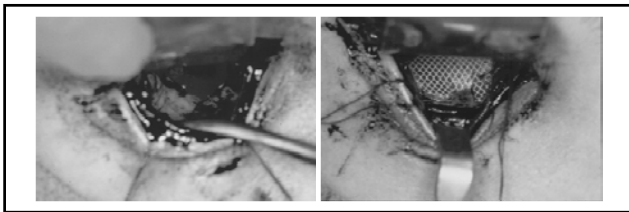
- Dramatic Increase in Facial Injuries in Soccer, Bicycle and Motorcycle
- MidFace Fracture: Soccer & Motorcycle
- TMJ Injuries: Bicycle, Rollerblading & Basketball
- Lower Contact Sports With Higher Incidence Rate Than High Contact Sports

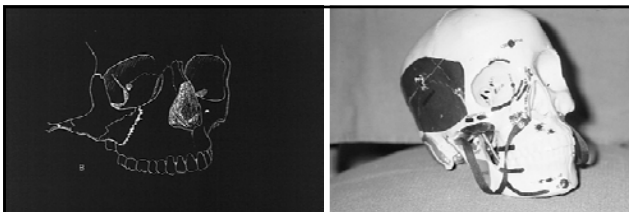


**BLOWOUT FRACTURE
VS
ZMC FRACTURE**

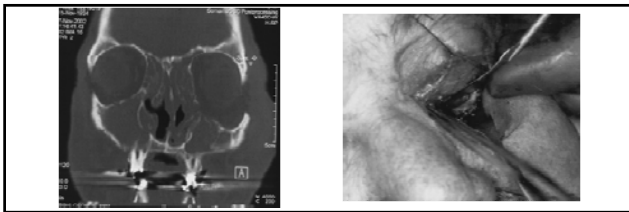


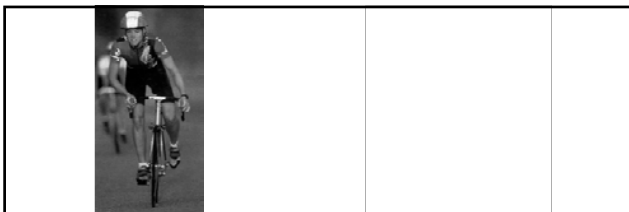




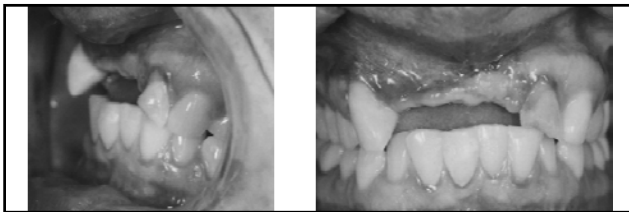


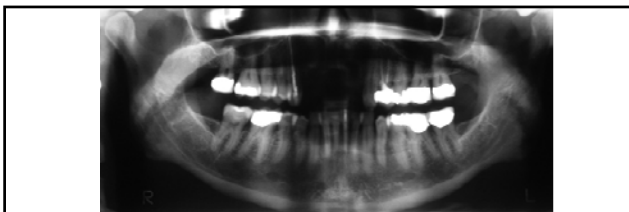


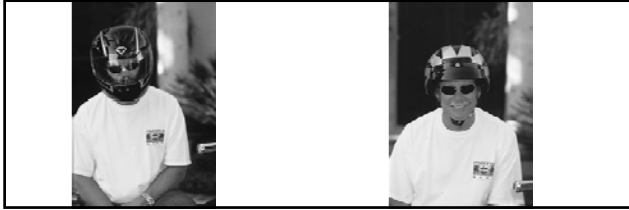




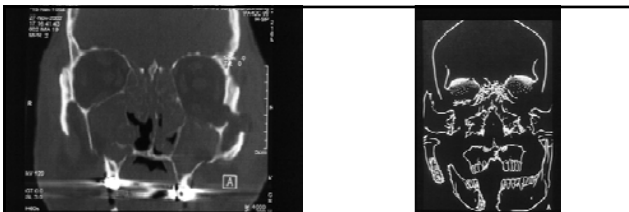
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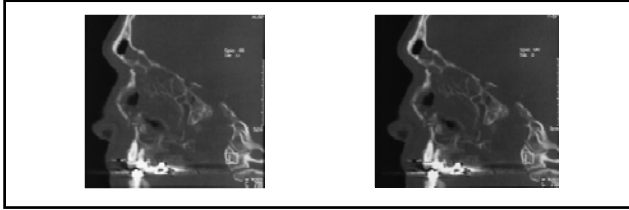




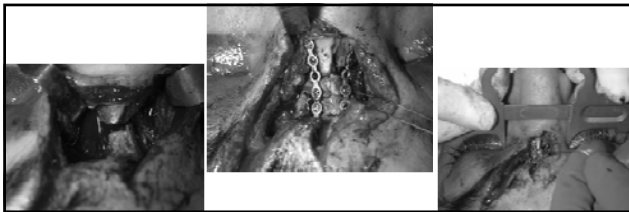


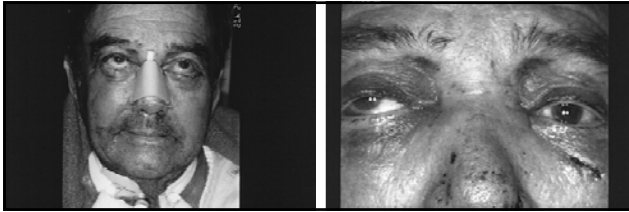
MOTORCYCLE INJURIES
The High Cost of Riding:
Life Threatening Mid-Face Fracture
Making Turn at 20 MPH

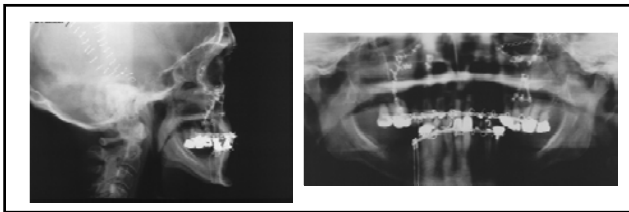


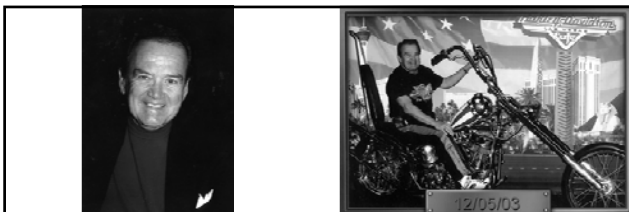


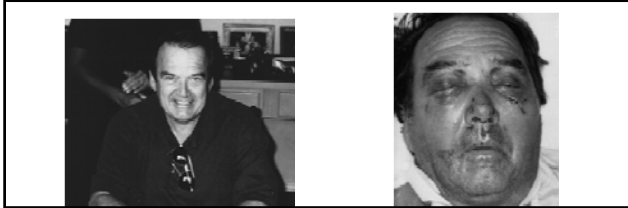












Non-Compliance Is A Real Problem **Concussion and Post Concussion Syndrome**

Blows to the Lower Jaw Drive the Jaw Up and Back
Stewart &Witzig Have Estimated That In Athletes, About 90% of Concussions Resulting In Unconsciousness Are From Blows To The Lower Jaw

- *Witzig J., Stewart S. New Finding of Importance of Athletic Mouthguards, VIJHS Newsletter, 1998;7.*



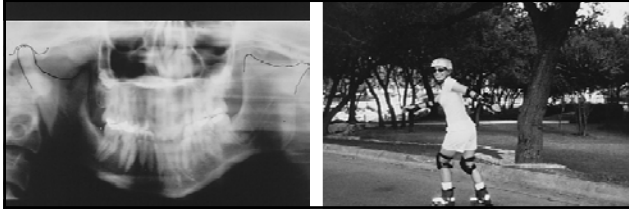
GROWTH CENTER OF MANDIBLE

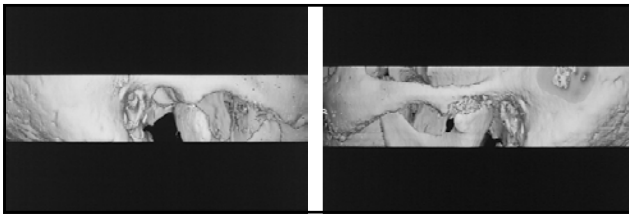
Only 1/2 Mature at Age 8
Full Maturity at Age 17-18

POTENTIAL PROBLEMS:

- Receding Chin
- Limited Jaw Movement
- Need for Possible Surgical Correction





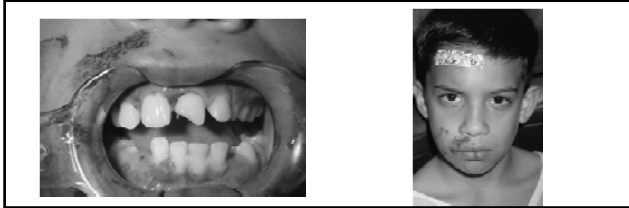




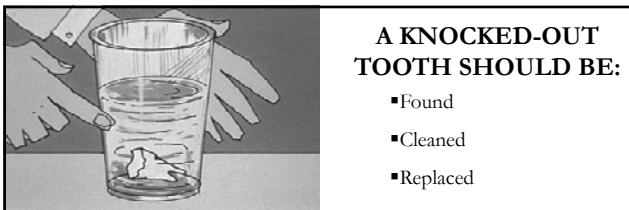




DENTOALVEOLAR FRACTURES	
■ 5-65% of Pediatric Facial Injuries	■ Treatment
■ Classifications	<ul style="list-style-type: none">• Fractured Teeth – Call Your Dentist Tomorrow• Luxation/Avulsion – Reposition +/- Stabilization• Alveolar Fracture – Stabilize 4 Weeks
<ul style="list-style-type: none">• Tooth Fracture• Tooth Luxation• Tooth Avulsion• Alveolar Process Fracture	



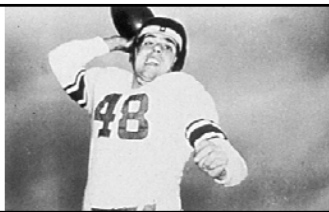


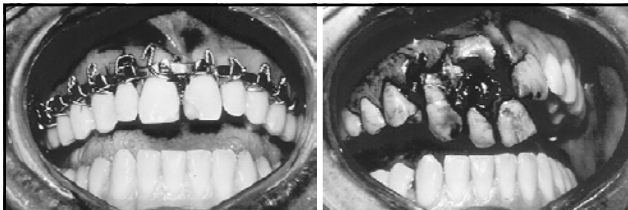


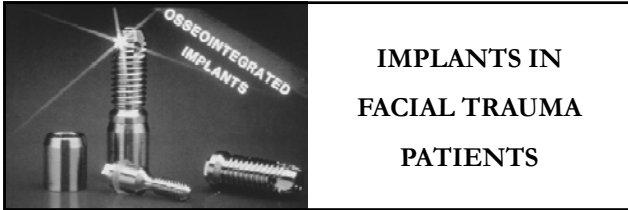
SAVE - A - TOOTH

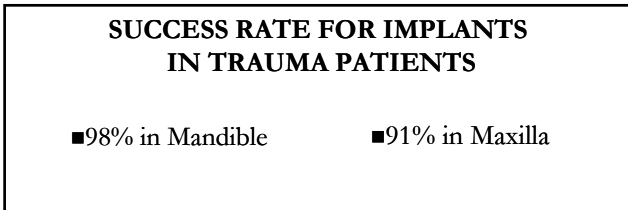


DISPLACED TOOTH





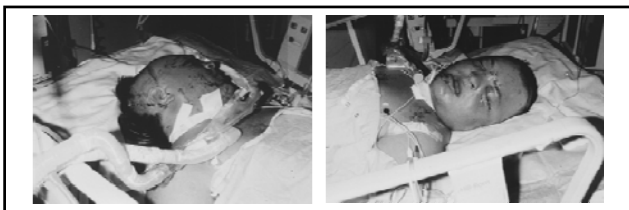
















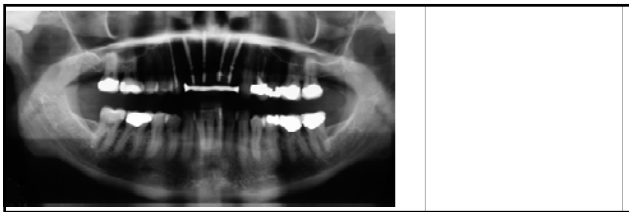






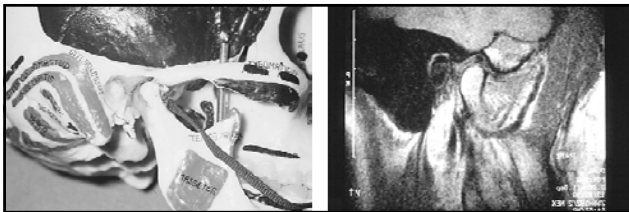


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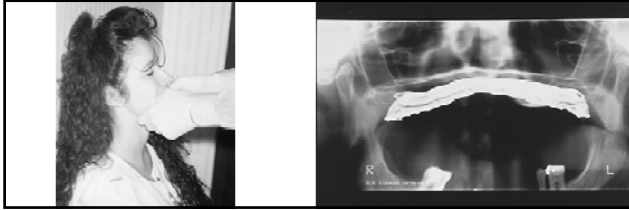


TMJ NEW MEDICO-LEGAL FRONTIER	TMJ INJURIES ■Dislocation ■Hemarthrosis ■Fracture
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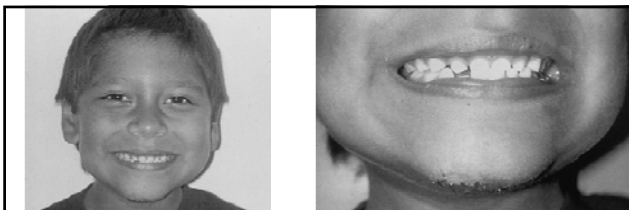
**20/20 TELEVISION
SHOW** **TMJ ANATOMY
REVIEW**



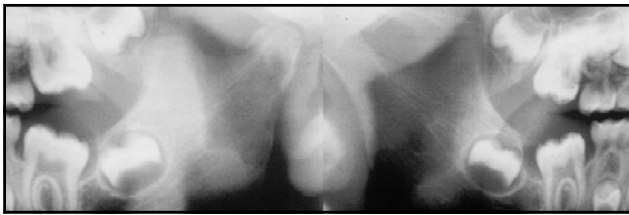




<p>MANDIBULAR CONDYLAR FRACTURES</p> <ul style="list-style-type: none">▪Most Common Mandibular Fracture (up to 60%)▪Closed Treatment versus Observation▪Rare Open Treatment▪Potential for Growth Disturbance▪Frequently Undiagnosed	<p>TRAUMA</p> <ul style="list-style-type: none">▪Hemarthrosis▪Fractures
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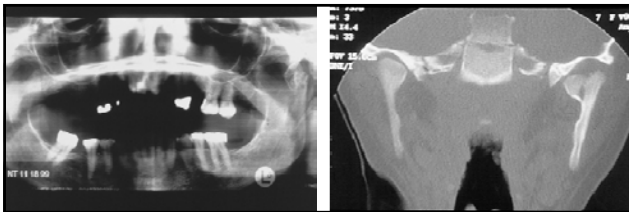
**PANORAMIC
RADIOGRAPHY**

■Imaging of Choice with
Dentoalveolar and
Mandibular Fracture



COMPUTED TOMOGRAPHY

■Imaging of Choice with Facial Fractures

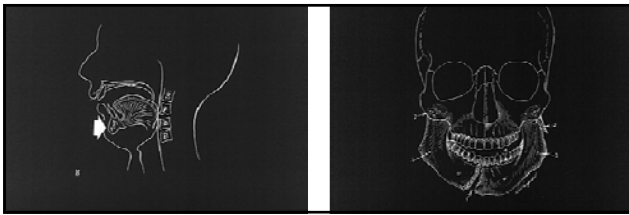


MANDIBULAR FRACTURES

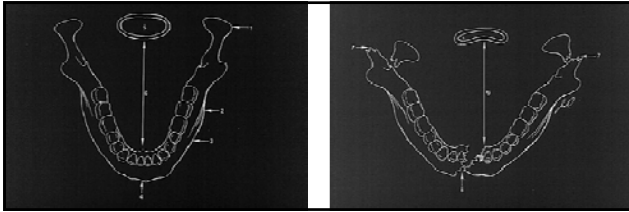
Anatomic Distribution of Facial Fractures

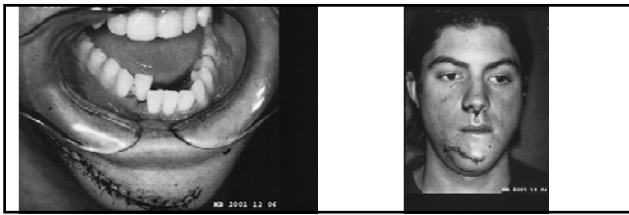
- Mandible 15-86%
- Midface 8-54%
- Upper Face 12-45%

**AIRWAY
MANAGEMENT** **FLAIL
MANDIBLE**

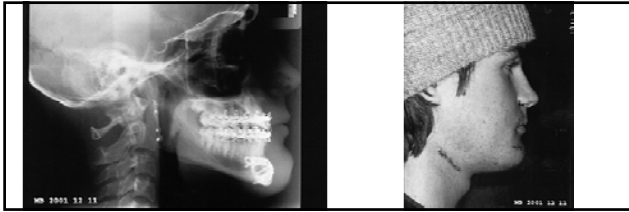



















NASAL INJURIES


- 2nd Most Common Mid-Face Injury in Young Athletes
- Most Common – Dentoalveolar Injuries

SIGNS OF NASAL FRACTURE

- Epitaxis
- Depression or Deviation of Nasal Pyramid
- Periorbital Ecchymosis & Edema
- Tenderness
- Crepitation or Abnormal Motion of Nasal Bone
- Obstruction of Airway by a Buckled or Deviated Septum

NASAL FRACTURE


- Gently Pack Nose with Gauze
- Apply Ice
- Do Not Blow Nose

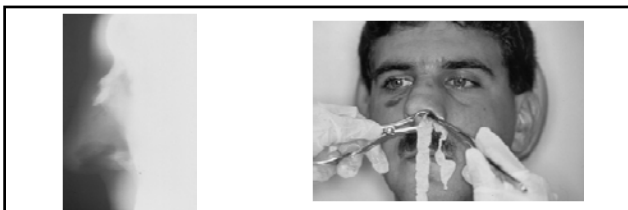


Young Person's Nose

- Less Susceptible to Fracture But More Vulnerable to Soft Tissue Injuries
- 1) Cartilaginous Detachment
- 2) Septal Hematoma

Septal Hematoma Must Be Incised and Drained to Prevent Septal Necrosis and Subsequent Growth Disturbances	Most Common Location of Nosebleed Anterior Septal Bleed from Kiesselbach Plexus
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	Ways To Stop A Nosebleed <ol style="list-style-type: none">1) Patient Sit Up and Lean Forward2) Cotton Soaked with Neo-Syn or Afrin and Press Against Bleeding Site for 5-10 Minutes3) If This Fails – Use Some Local Anesthetic4) Then Silver Nitrate Sticks5) Can Place Surgical or Pack Gauze Strip in for 24 Hours
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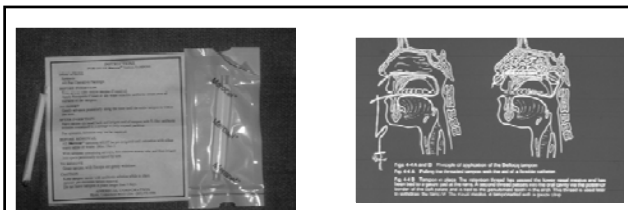


NASAL TAMPONS

- 1)Merocel
- 2)Rapid Rhino
- 3)Rhino Rocket

MEROCEL

- Compressed, dehydrated sponge
- Requires rehydration to achieve optimal size to compress vessels



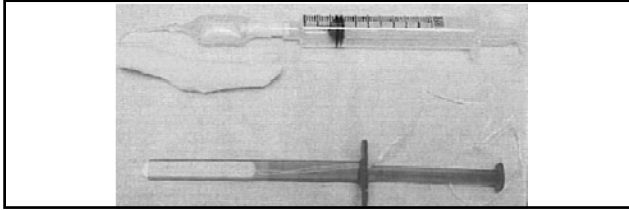
RAPID RHINO

- Nasal Catheter covered with a layer of well-knitted hydrofibre
- Hydrofibre forms a gel in contact with water – self lubricating

RAPID RHINO

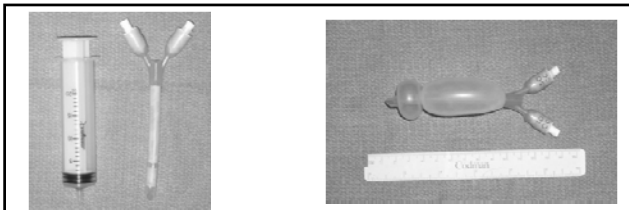
- 1) Less painful on insertion and removal
- 2) Causes less bleeding on removal





EPISTAT

- Distal and Proximal Balloons inflate.
- Distal First – pull forward until against Choana
- Then inflate Proximal



Complications of Nasal Packing

- 1) Failure to stop bleeding
- 2) Toxic Shock Syndrome
- 3) Blockage of:
 - 1) Nasolacrinal Duct
 - 2) Sinus Drainage
 - 3) Nasal Airway
- 4) Nasovagal Reflex
- 5) Displacement of Pack into oropharynx
- 6) Sleep Apnea



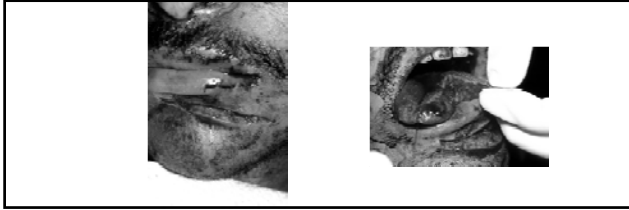
Post Bleed Orders

- 1) Do Not Blow Nose
- 2) Avoid Strenuous Exercise and Stooping
- 3) Sleep with 2-3 Pillows
- 4) No Alcoholic Beverages
- 5) Use a Laxative if Constipated

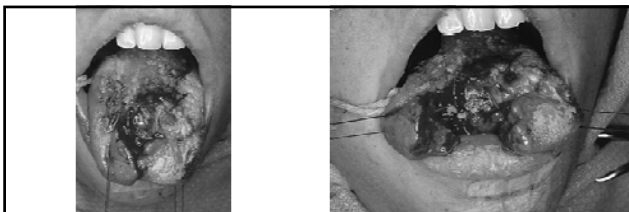


Facial Bleeding

- Cover Wound with Cloth – Apply Pressure
- Do Not Remove Soaked Cloth
- Use Additional Cloth and Continue Pressure





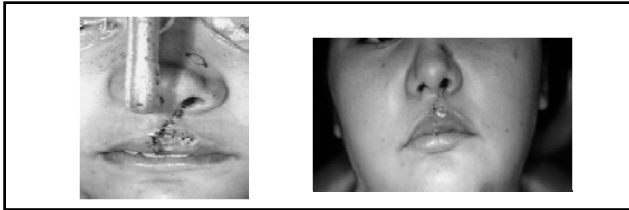


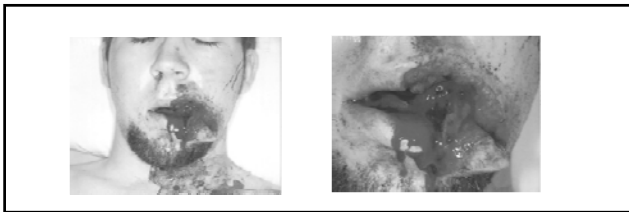
LIP LACERATION

- White or Gray Line = Mucocutaneous Line Is Most Important Landmark
- 1/4 of Lip Can Be Lost Without Resultant Functional or Aesthetic Defect












Ear Laceration
▪ Hematoma of Ear Must Be Aspirated So The Ear Will Not Get Fibrosed and Thickened
(Cauliflower Ear)

1) Proper Sports Equipment
2) Dental and Oral Screening Before Play
Example: Montreal 1976

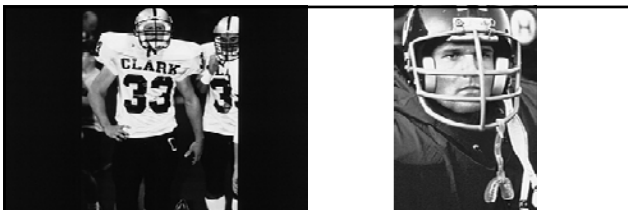


HARD HATS FOR LITTLE HEADS
■ Is designed to help physicians and their families generate goodwill and demonstrate their commitment to preventing injury and saving lives.
■ A record 6,800 Texas children received a free bicycle helmet through this community service effort during 2004.

**HEAD INJURY IS THE LEADING CAUSE OF
SERIOUS DISABILITY OR DEATH IN BICYCLE
CRASHES**

- Bicycle helmets can help reduce the risk of head injury by as much as 85 percent.
- Unfortunately, only about 25 percent of bikers put on a helmet when they ride.

- Helmets are purchased through the TMA.
- Buying at least 50 helmets, you are guaranteed a match of 50 helmets.
- For the price of 50 helmets (@ \$250), you can put helmets on 100 children.



House Bill 675

House Bill 675 prohibits school districts from using football helmets 16 years or older . Under the new law school districts must recondition all helmets 10 years or older at least once every 2 years.








PROPER FITTING MOUTH GUARD SHOULD:

- Hold teeth in place
- Allow athlete to speak and breathe properly
- Resist tearing
- Provide protection



BOXING

BENEFITS OF MOUTH GUARD PROTECTION

- Absorbs Energy From Falls or Blows
- Cushions Force of Lower Jaw Slamming into Upper Jaw
- Helps Maintain Jaw Alignment

**New Mouthpiece Design
Jaw Joint Protector**

Brain Pad
Protect Teeth and Skull Base
By Keeping the Mandible
Down and Forward

Mouth guards are common in football, hockey and boxing. However a growing number of athletes in non-contact sports are claiming improved strength, power, accuracy and improved thinking under pressure by using a jaw positioning retainer.

Theory~ Clenching your teeth pinches nerves that run through the TMJ causing the bone to produce cortisol. (∴ increase HB, BP and triggers fright or flight response)

Examples:

1. Derek Jeter
2. Shaq
3. Hunter Mahan (wears his mouth piece while he practices but not during tournaments)

There are many types of mouth guards:

1. ArmourBite ® Mouthpiece - Under Armour
2. Makkar PPM – Pure Power ® Performance Enhancing mouth guards
3. Shock Doctor ™ mouth guards- MORA(mandibular orthopedic repositioning appliances)

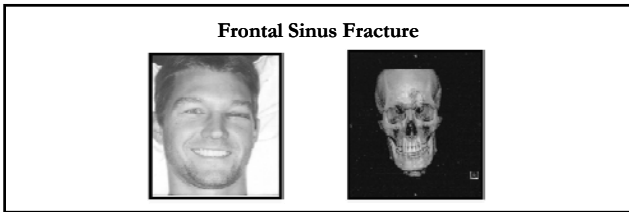
Cortisol “The Stress Hormone” is essentially the trigger for adrenaline.

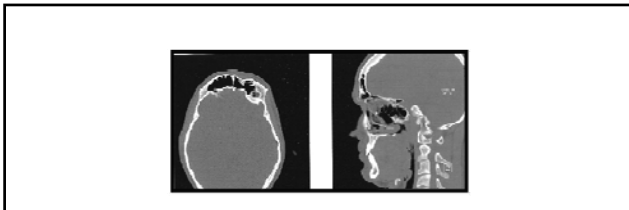
Properly designed oral appliances can interrupt the fright or flight signal by preventing the completion of clenching mechanism.

Mandibular position and oral appliances positively affect not only upper body strength but also endurance, recovery from athletic competition, concentration and stress response.

MORA - Mandibular Orthopedic Repositioning Appliance

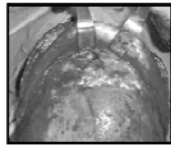
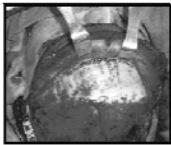
Muscular activity is an integral part of the "Fight" or "Flight" response.





Bicoronal Flap





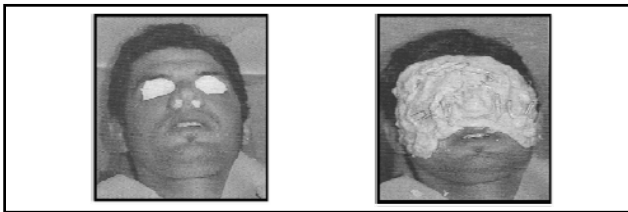


Security Hi-Tech Individual Extra-Light Devices

Mask: A New Protection for [Soccer] Players

*Piero Cascone, MDS, Bernardino Petrucci, MD,
Valerio Ramieri, MD & Marianetti TitoMatteo, MD.*

Courtesy of The Journal of Craniofacial Surgery




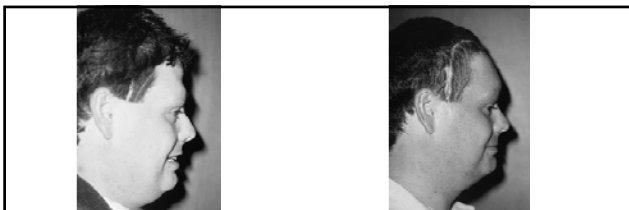




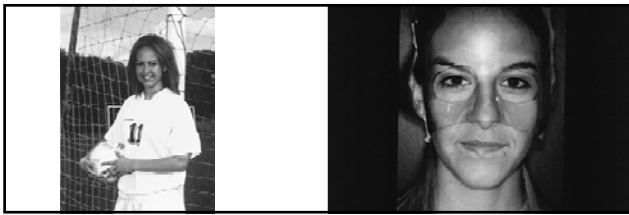
COMPUTER GENERATED PROSTHESIS

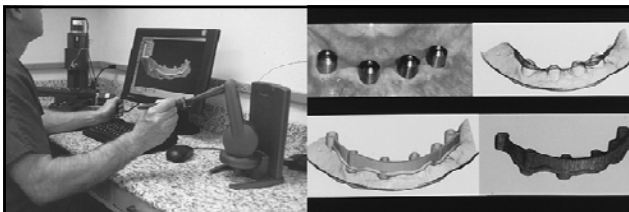
- 1) Converts CT Scan Data to 3 Dimensional Images, Anatomical Models and Custom Implants
- 2) Reduces OR/Chair Time
- 3) Lower Patient Cost
- 4) Patient Friendly

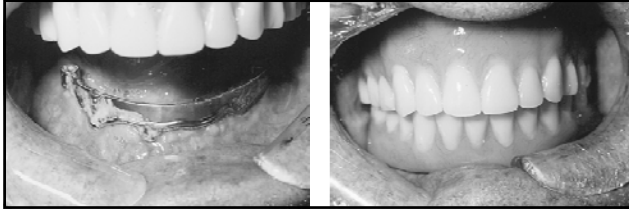












SUMMARY

EMERGENCY EQUIPMENT

- Towel Clamp
- Hemostat
- Pin Light
- Tongue Blade
- Cotton Balls
- Afrin or Neosynephrine

General Considerations	PANOREX X-RAY
•ABCs	The Most Effective
•Concomitant Injury	X-Ray
•Diagnosis	
Physical Examination	
Imaging	

DO NOT NEGLECT OR MISS A CONDYLAR OR TMJ INJURY	TIME MOST IMPORTANT FACTOR IN REDUCING A TMJ DISLOCATION
--	---

IF TEETH GET KNOCKED OUT -- FIND THEM --	
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**GROWTH CENTER
OF MANDIBLE**

Septal Hematoma
Must Be Incised and
Drained to Prevent Septal
Necrosis and Subsequent
Growth Disturbances

FACIAL BLEEDING

- Cover Wound with Cloth –
Apply Pressure
- Do Not Remove Soaked Cloth
- Use Additional Cloth and
Continue Pressure

**NON-COMPLIANCE
IS A REAL
PROBLEM**

Steps to Sideline Preparedness

- 1) Equipment
- 2) Education
- 3) Practice & Teamwork



80% of Epitaxis is from Anterior Bleeding in Kiesselbach Plexus

Posterior Bleeding Derives Primarily from Post Septal Nasal Artery (a branch of Shenopalatine artery) which forms part of Woodruff Plexus



