

# Non-pulmonary Barotrauma

# Non-pulmonary BT

- Sinus Squeeze

- 12% divers experience
- Air trapped in sinus (i.e. sinus passageway blocked) decreases in volume as you descend
- Can “suck” soft tissues into gas space -> blood vessels engorge and leak blood
- Blood will often drain during ascent
  - Air expands, open passageway
  - H/A commonly accompanies

- Sinus BT

- Air in sinuses that expands on ascent

- S/Sx

- Pain, press, bloody nasal discharge, odontalgia

- Treatment is symptomatic

- Nasal, PO decongestants
- Abx if dev infection
- Refer if #

- RFs

- URTI, allergic rhino-sinusitis, acute or chronic infectious sinusitis, nasal polyps, mucosal retention cysts, deviated nasal septum, congenital osteo-meatal dystrophy, Wegener’s, rhinitis medicamentosa

- Prevention

- Don’t dive with URTI, allergies, nasal deformities (deviation, polyps)
- Caution med use while diving – can wear off
- ENT referral PRN, eg if recurrent

# Non-pulmonary BT

- Mask/Face Squeeze
  - Air in mask also follows Boyle's law
    - Need to add air to space during descent otherwise gas compressed and "sucks" facial soft tissues/eyes in
  - Tx largely symptomatic
  - Prevention - ensure to equalize your mask during descent
- Suit Squeeze
  - Air in drysuit compresses against skin on descent, skin forced into folds
  - Seal around neck can constrict
  - Tx – symptomatic (ensure DDx)
  - Prevention - light garment under suit, ensure adequate air layer
- Ear Squeeze/BT
  - See ENT section
- Dental BT (rare)
  - Air trapped within tooth expands on ascent or air pocket distorted during descent
    - Decay, dental surgery, improper/loose fillings
  - Tx: Dental assessment, analgesia
  - Prevention
    - Dental hygiene, dental fillings replaced if loose, ?appropriate time between dental surgery & diving
- GI BT (rare)
  - Air expands/contracts in GI tract
  - Perf rare – if occurs likely lesser gastric curvature with panic ascent
  - Prevention - avoid swallowing gas (anxious, nausea, head down ascent with Valsalva, excess reg press)
    - If cramps on ascent, stop and remove gas