

## Dentist in space mission

Dental Emergencies and Dental Maintenance needs to be deal with for Space travel, since humans live in micro-gravity for several months to years. What if an astronaut has an abscess or fractures a tooth while on a mission? What if a pre-existing restoration or virgin tooth fractures? How can you maintain proper Oral Hygiene on long flights or extended stays on the ISS? What affect does micro-gravity have on the Oral Cavity as it relates to gingivitis, periodontal disease, and bone loss? Since teeth are housed in bone, what effect will weightlessness have on tooth support; in order to maintain proper bone density? or, does zero gravity affect Maxillary and/or Mandibular bone density at all? After a permanent tooth is extracted, with no bone filler within the "socket", the bone at the extraction site will atrophy.howerver, if you place an implant in the site of a previously extracted tooth, bone will not be lost. My group research and experimentation initiatives are the following: 1. What Dental procedures are compatible in micro-gravity? After research, methods and proven techniques are established, training a selected crew member on the Space Shuttle or working on the ISS for

an extended stay is necessary. Dental Emergency Protocol must be realized and standardized in order to prevent what would be a common post-op complication on earth, but in space, would be life threatening. It is imperative that we send that "Aeronautic dentist in space " to perform first response protocol through experimentation. Understanding the affects of tooth extractions (including bleeding time, healing time, infection rate, bone regeneration, bone degeneration, periodontal disease, and caries prevalence). It is in the best interest for space travelers to have a "Dental Emergency and Maintenance Protocol System" available. Such a protocol is imperative for long distance space travel (Mars) or a working settlement including the ISS in space, This Protocol has tremendous significance and reimbursement to all those crew members that may have a Dental Emergency. While strengthening the space program, the knowledge gained from micro-gravity tested procedures would help those who need Emergency Dental Care in Third World Countries. Dental Experimentation needs to become a priority for the safety of anyone who travels in space.

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