



## Astronautic Dentistry .... A New Approach for Dental Health Care of Space Traveller

**Ketan Ghosalkar\***

*Department of Dental, India*

**\*Corresponding Author:** Ketan Ghosalkar, Department of Dental, India.

**Received:** December 13, 2018; **Published:** January 08, 2019

### Introduction

Human physiological adaptation to the conditions of space is a challenge as far as oral health is concerned. A new field, Astronautic dentistry, be introduced to facilitate dental research and practice in aeronautical environments.

### Aim

To introduce the concept of astronautic dentistry and oral hygiene care for astronauts

### Role of astronauts



Figure 1

### Astronaut preparing for brushing the teeth

Oral hygiene in orbit:



Figure 2

### Oral hygiene kit including A toothbrush, toothpaste and water bag

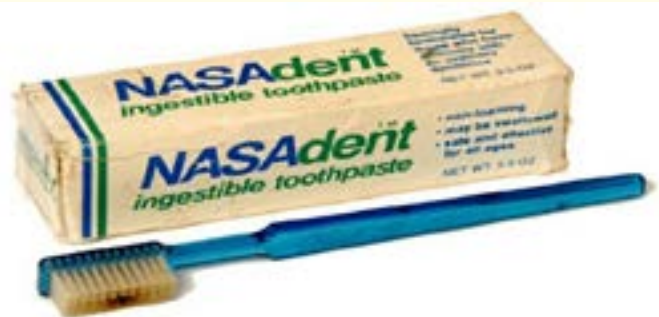


Figure 3

### Toothpaste for astronauts

1. Swallowable toothpaste (because water cannot be wasted for rinsing and cannot spit in microgravity atmosphere) twice daily.
2. Normal brush

Flossing (after every meal).

### Avoid travelling with:

1. Weaker dental filling, crown or bridges.
2. Untreated cavities.
3. Ill fitted orthodontic appliances and prosthesis.

### Role of dentist



**Figure 4**

### Avoid travelling with:

1. Periodontal check-up before and after space travel
2. Microbial mutation rate increases
3. Reduced efficiency of antibiotics in space.

### Dental problems

1. Aerodontalgia
2. Periodontitis
3. Dental caries
4. Bone loss
5. Fracture in jaw bone
6. Pain and numbness in teeth and soft tissues
7. Salivary duct stones
8. Oral cancer

### Emergency Treatment



Skylab inflight medical supplies support system including a dental kit.

**Figure 5**

1. Every mission has two crew medical officers (CMOs)
2. Trained to perform not only medical emergency procedures, but dental emergency procedures as well.

They are authorized to treat with antibiotics and analgesics, administer anaesthetics, place temporary dental fillings, replace a crown with temporary cement, treat exposed pulp, and as a last resort, extract teeth. A true emergency situation would likely result in a return to earth for proper treatment [1-3].

### Conclusion

Good oral hygiene practices are necessary for astronauts as the prevalence of dental diseases is more in space. Astronautic dentistry has to be evolved for future long term space travel.

### Bibliography

1. Interview: Extracting a tooth should be the last resort in space.
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**Volume 3 Issue 2 February 2019**

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