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SPACE MEDICINE OVERVIEW (MINI REVIEW)

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INTRODUCTION

Space Drugs, frequently known as aerospace drugs, are a technical thing of drugs that focuses on the health and well-being of astronauts and the medical issues involved with space trips. In this section, we will look at how medicinals and treatments interact with the mortal body in the unusual terrain of space.[1,2,3] The mortal body faces colorful problems in space, including microgravity, radiation, and altered physiological responses. As a result, medicinals and medical treatments must be precisely designed to address these issues while also icing astronauts' health and well-being. [2] In discrepancy, telemedicine refers to delivering medical treatments using telecommunications technology. Supporting astronauts' health and well-being during space operations requires the integration of telemedicine and space drug.[1]

illustration, bear more in microgravity than they do on Earth. This can affect medicine immersion, distribution, metabolism, and excretion in the body.[3] Fluid distribution changes can impact blood inflow, potentially affecting drug attention in different napkins. Travelers to space might be at danger for health problems since they are subjected to higher radiation levels than those on Earth. Radiation exposure consequences and mitigation techniques should be included in medical education.[3,4]

An analysis of space medical case studies

In 1950, A component group was formed by many association members to concentrate on the developing area of space medicine following the establishment of the Department of Space Medicine by the U.S. Air Force School of Aviation Medicine.[4] Due to similar health risks associated with both types of flight, such as radiation exposure, exposure to G-forces, emergency ejection injuries, low oxygen and microgravity conditions, the field of space

medicine has grown over time to include aviation.[5,3,4]

In April 2000, an IOM committee session on oral health featured a presentation on atraumatic restorative therapy (ARTa). Here the carious tooth tissue is removed with hand instruments instead of electric rotating handpieces and then cavity is restored with an adhesive restorative material such as glass ionomer, resulting in sealed restoration (Estupiñän-Day, 2000). The advantages of ART are little/no pain, reduced need for local an aesthesia, minimum tooth trauma, conservation of healthy tooth tissue, simple and easy to perform technique.[1]

In 2021, Astro Access flew 12 persons with physical limitations, including paraplegia, in a parabolic flight in microgravity. After 15 tests, the passengers had a 90% chance of returning to their seats in microgravity. This is an essential first step in assessing if people with impairments might fly suborbitally.[1]

Space medicine, according to my most recent knowledge update in January 2022, entails the study and application of medical concepts to the specific problems offered by space flight and exploration. There may have been new innovations and breakthroughs in the subject since then.[1,5]

Table 1. An overview of medical problems that have occurred or may emerge during spaceflight. The Space Exploration Medical Condition List prioritizes illnesses that may affect crew members and is based on a 13-month return journey with one month spent on another planet's surface (no scheduled spacewalks). "Not addressed" conditions are ones that are extremely rare to arise, cannot be treated with insufficient medical ability, or require far too many resources to treat well.[5]

Common/anticipated	Occasional incidences	Space Exploration Medical Condition List capability	Not addressed
• Space Motion Sickness • Nasal/sinus congestion • Constipation • Headache • Back pain • Upper Respiratory tract infection • Minor Abrasion • Musculo- skeletal	• Renal stone formation • Acute urinary retention • Cardiac Dysrhythmias - Extra systoles - Bigeminy - SVT - Sustained VT (asymptomatic)	• Radiation sickness • Severe Decompression illness • Barotrauma • Osteoporosis • Seizure • Anaphylaxis • Anxiety • Depression • Medication overdose/misuse • Palliative treatment • Diverticulitis	• Cardiogenic shock • Malignancy • Acute Glaucoma • Compartment syndrome • HeadInjury • Hypovolemic shock • Lumbar spine

trauma • Corneal irritation • Insomnia	• Urinary tract infection • Gastroenteritis • Prostatitis • Serous otitis media • Contact dermatitis • Decompression sickness (joint pain) • Near drowning after spacesuit failure • Aspiration of foreign body	• Appendicitis • Sepsis • Herpes reactivation Cellulitis • Otitis media/externa • Dental - Cavity - Pulpitis, - Toothache, - Avulsion, Loss • Eyepenetration • Chest trauma/Pneumothorax • Obstructedairway • Hemorrhage (thermalorchemical) • Smoke in halation	fracture • Shoulder/elbow dislocation

CONCLUSION

In the field of space medicine, advances frequently focus on overcoming the obstacles of long- term space flight, such as microgravity-induced physiological changes, radiation exposure, psychological stress, and restricted medical resources.[2,3,5] Microgravity's impact on human physiology, as well as the development of therapies to mitigate these effects, are continuing space medical priority. New technologies might include enhanced laboratory equipment for doing biomedical research in space, as well as novel techniques to researching the molecular processes behind microgravity-induced alterations.[6,7] It's critical to remember that space medicine is a fast- growing discipline, with new discoveries and breakthroughs likely to emerge as technology evolves and our understanding of human physiology in space improves.[3,5,7] For the most recent breakthroughs in space medicine, I recommend reviewing recent scientific publications or aerospace medicine-focused news sources.

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