

INPLASY

INPLASY2024110122

doi: 10.37766/inplasy2024.11.0122

Received: 29 November 2024

Published: 29 November 2024

Corresponding author:

RAVI

rkrokna5@gmail.com

Author Affiliation:

DEPARTMENT OF PHYSIOTHERAPY,
SCHOOL OF ALLIED HEALTH SCIENCES,
GALGOTIAS UNIVERSITY SECTOR, 17-A,
YAMUNA EXPRESSWAY, GAUTAM
BUDHH NAGAR, GREATER NOIDA,
UTTAR PRADESH - 203201, INDIA.

Preparation and Reconditioning of Astronaut using Concurrent and Aerobic Training prior to and following long duration Spaceflight - A Narrative Review

Ravi; Gupta, S.

ADMINISTRATIVE INFORMATION

Support - This research did not receive a specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024110122

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 November 2024 and was last updated on 29 November 2024.

INTRODUCTION

Review question / Objective The objective of this study is to determine the preparation and reconditioning of astronaut using concurrent and aerobic training prior to and following long-duration spaceflight.

Rationale To find out which training, concurrent and aerobic exercise is more effective for preparation and reconditioning of astronaut during before and after spaceflight.

Condition being studied Effect of concurrent and aerobic training on astronaut for preparation and reconditioning during before and after spaceflight.

METHODS

Search strategy An electronic search on different database → Google scholar, Scientific Electronic Library Online (SciELO), Medical Literature Analysis

and Retrieval System Online (MEDLINE), Scopus, PUBMED, Web of Knowledge ISI, Physiotherapy Evidence Database (PEDro), Cumulative Index to Nursing and Allied Health Literature (CINAHL), will be conducted for research published during time period (2017-2024) using Medical Subject Headings (MeSH) for 'reconditioning' 'concurrent training' AND 'aerobic training' AND 'astronauts' AND 'spaceflight'. The 'OR' search terms used for (MeSH) keywords and were combined with 'AND' and searched in 'All Fields'.

Participant or population Astronaut.

Intervention Interventions based on the following types of exercise: concurrent and aerobic training.

Comparator Control group, Conventional treatment, Stretching and strengthening exercises.

Study designs to be included RCTs and non-RCTs.

Eligibility criteria

1. Published in English.
2. Randomized Controlled trial (RCT) and Non-randomized controlled trial
3. Types of Intervention – interventions based on the following types of exercise: concurrent and aerobic training.
Interventions that included one or more than one exercise typology were included.
4. Full text articles will be included.

Information sources An electronic search on different database → Google scholar, Scientific Electronic Library Online (SciELO), Medical Literature Analysis and Retrieval System Online (MEDLINE), Scopus, PUBMED, Web of Knowledge ISI, Physiotherapy Evidence Database (PEDro), Cumulative Index to Nursing and Allied Health Literature (CINAHL), will be conducted for research published during time period (2017-2024) using Medical Subject Headings (MeSH) for 'reconditioning' 'concurrent training' AND 'aerobic training' AND 'astronauts' AND 'spaceflight'. The 'OR' search terms used for (MeSH) keywords and were combined with 'AND' and searched in 'All Fields'.

Main outcome(s) Aerobic capacity, Strength and Endurance.

Additional outcome(s) NIL.

Data management Articles post screening and selection; the selected articles important information will be extracted by the fourth author. The information about the type of the study, study participant population, the kind and length of the intervention, the outcomes will be assessed. The accuracy and consistency of the data will be examined.

Quality assessment / Risk of bias analysis PEDro scoring will be done for included articles after identification, screening, and fulfilment of eligibility criteria.

Strategy of data synthesis Reviewers will screen the titles and abstract records. Full-text articles will be obtained for potentially eligible records.

Subgroup analysis It will be done by group analysis to explore heterogeneity.

Sensitivity analysis It will be done to assess the stability of the result and not by chance.

Language restriction English.

Country(ies) involved India.

Other relevant information N/A.

Keywords Reconditioning, Concurrent training, Aerobic exercise, Astronaut, Spaceflight.

Dissemination plans The findings of this narrative review will be disseminated through multiple channels to reach a broad audience of researchers, clinicians, and policymakers. The review will be submitted for publication in a peer reviewed journal focused on rehabilitation or physiotherapy. Additionally, results will be presented at relevant national and international conferences to engage with the professional community. To enhance accessibility, summaries and key findings will be shared through institutional platforms, social media, and open-access repositories, ensuring wide reach and impact across healthcare and academic sectors.

Contributions of each author

Author 1 - Ravi - Conception, Methodology, Data extraction and writing initial draft.

Email: rkrokna5@gmail.com

Author 2 - Sachin Gupta - Supervision, Development of the selection criteria, Revision of the draft, Approval of the final manuscript.

Email: sachinguptapt3@gmail.com

Author 3 - sachinguptapt3@gmail.com.