

R I C E R C A

The Methods of Resistance Training

The Advanced Resistive Exercise Device (ARED) now available to astronauts on the ISS is capable of delivering up to **600** pounds of Force (**2,700 N**).

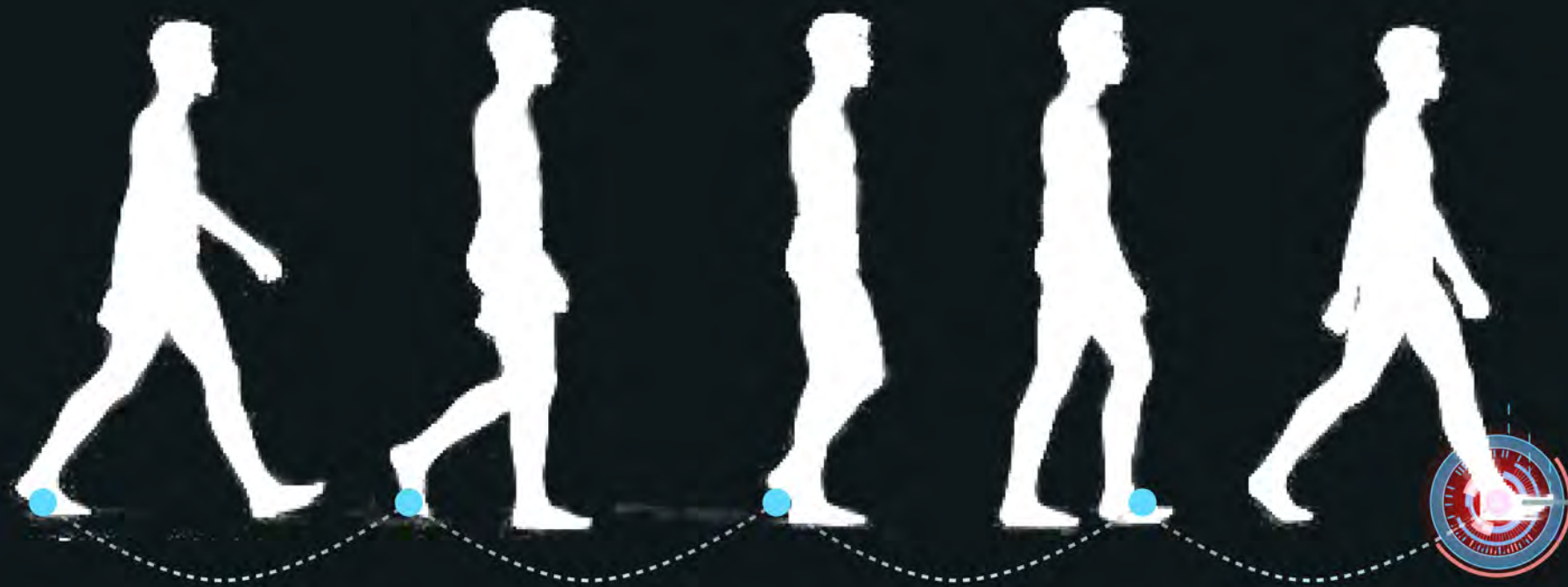


Astronauts on the space station must use the resistance device for about 2 hours a day to keep fit.

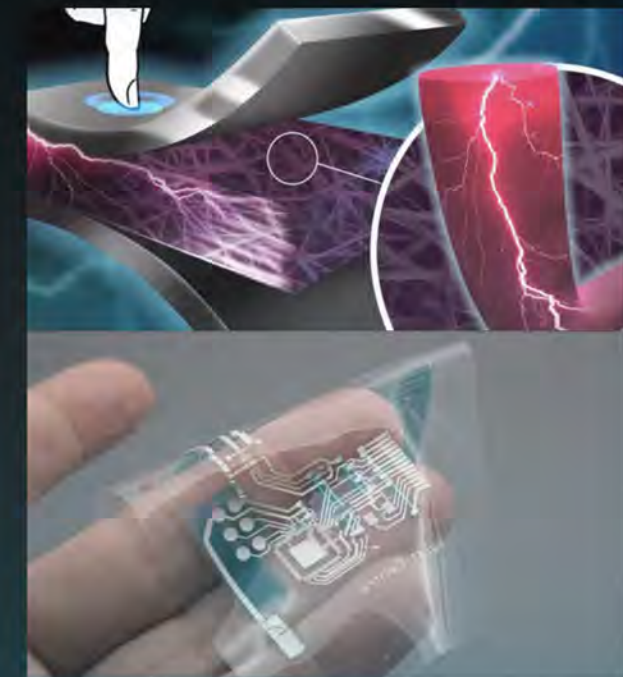
R I C E R C A

Ottenere energia dalle attività quotidiane

Human movement, particularly walking, generates considerable mechanical energy, which provides an opportunity to harvest energy. During walking, particularly during the heel contact phase, energy is mainly converted into heat and dissipated. Studies have estimated that the typical runner can generate energy losses between **1.72 and 10.32** joules per step.



Staying in the base for most of the time on the Moon enables energy harvesting of daily human activities, increasing the efficiency and sustainability of energy use.

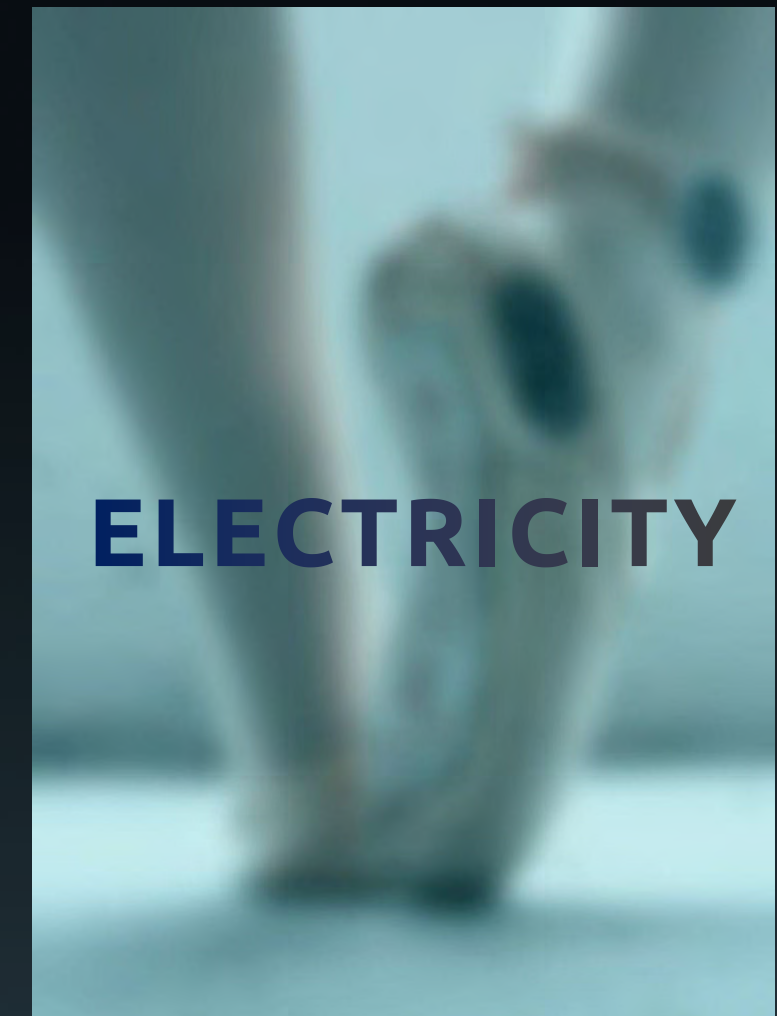
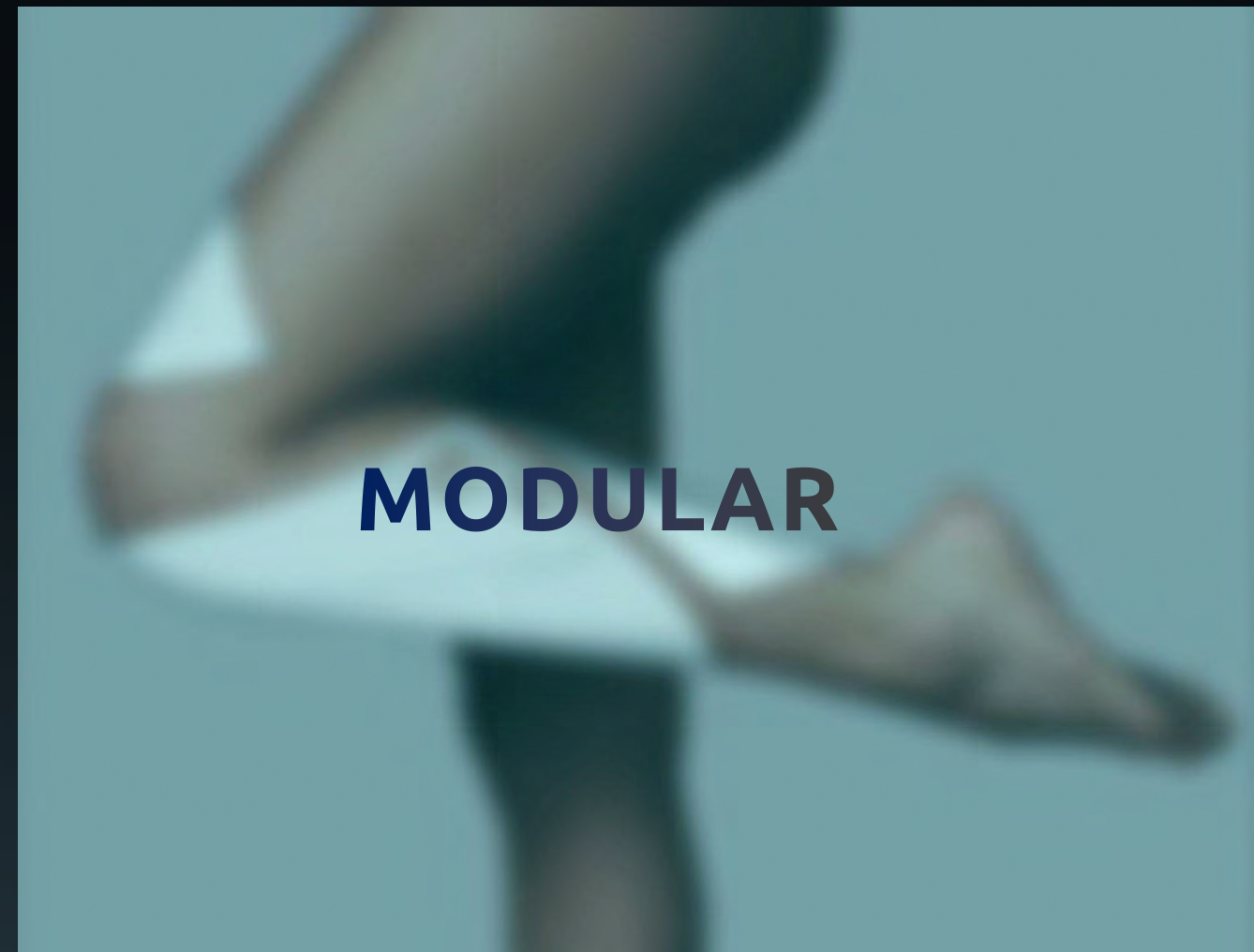


It is a material that can generate tension when subjected to mecha-nic pressure



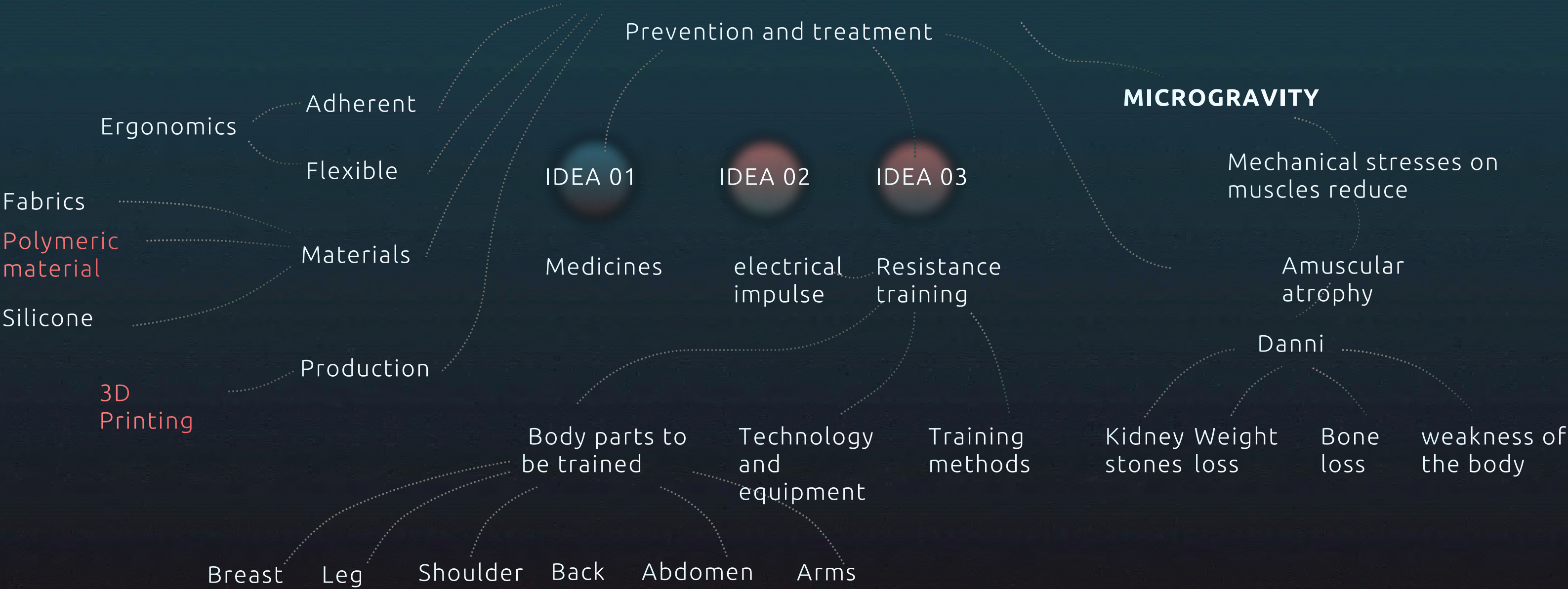
CONCEPT

The legs with the addition of the detachable modules that meet different needs and intensities of muscle maintenance and collect electrical energy through movement.

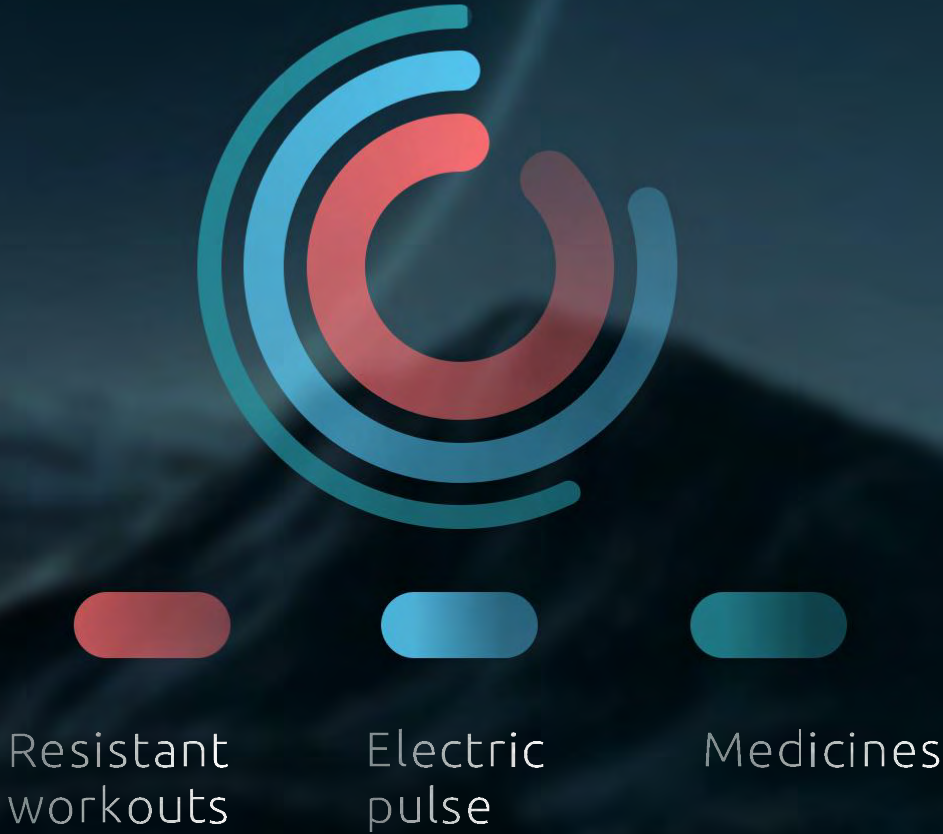


MINDMAP

WEARABLE DEVICES



CRITERIA	IDEA 03	IDEA 02	IDEA 01
ACCESSIBILITY	4	4	3
COMPATIBILITY	5	4	3
PRACTICE	4	4	4



Based on the results of these evaluations, our group concluded that resistance training is the best solution to the problem of muscle atrophy in a microgravity environment.