

STEMonstrations



EXERCISE



1
00:00:00,900 --> 00:00:10,343
[MUSIC]

2
00:00:15,949 --> 00:00:17,417
>> HEY THERE, MY NAME IS

3
00:00:17,417 --> 00:00:19,419
JOE ACABA, AND I'M LIVING AND

4
00:00:19,419 --> 00:00:20,820
WORKING ON THE INTERNATIONAL

5
00:00:20,820 --> 00:00:22,288
SPACE STATION AS PART OF

6
00:00:22,288 --> 00:00:24,491
EXPEDITION 53.

7
00:00:24,491 --> 00:00:25,825
ONE OF THE BEST PARTS ABOUT

8
00:00:25,825 --> 00:00:27,260
LIVING ON THE SPACE STATION

9
00:00:27,260 --> 00:00:29,229
IS BEING ABLE TO FLOAT.

10
00:00:29,229 --> 00:00:30,130
JUST LIKE YOU WALK

11
00:00:30,130 --> 00:00:31,131
FROM PLACE TO PLACE

12
00:00:31,131 --> 00:00:32,465
THROUGHOUT YOUR DAY,

13
00:00:32,465 --> 00:00:34,067

WE FLOAT FROM PLACE TO PLACE

14

00:00:34,067 --> 00:00:35,702

THROUGHOUT OUR DAY.

15

00:00:35,702 --> 00:00:36,870

HOWEVER, WE HAVE LEARNED

16

00:00:36,870 --> 00:00:37,804

THAT THE SAME THING THAT

17

00:00:37,804 --> 00:00:39,172

ALLOWS US TO FLOAT--

18

00:00:39,172 --> 00:00:40,840

MICROGRAVITY-- IS HARD

19

00:00:40,840 --> 00:00:42,942

ON OUR BODIES OVER TIME.

20

00:00:42,942 --> 00:00:44,010

OUR MUSCLES AND BONES

21

00:00:44,010 --> 00:00:44,844

ARE MADE OF MILLIONS

22

00:00:44,844 --> 00:00:46,579

OF TINY UNITS CALLED CELLS,

23

00:00:46,579 --> 00:00:47,614

AND THESE CELLS CAN HAVE

24

00:00:47,614 --> 00:00:49,716

PROBLEMS IN MICROGRAVITY.

25

00:00:49,716 --> 00:00:50,917

UP HERE ON THE STATION,

26
00:00:50,917 --> 00:00:52,185
BONES AND MUSCLES NO LONGER

27
00:00:52,185 --> 00:00:53,386
HAVE TO SUPPORT THE WEIGHT

28
00:00:53,386 --> 00:00:54,454
OF OUR BODIES,

29
00:00:54,454 --> 00:00:55,755
SO THEY GET WEAKER.

30
00:00:55,755 --> 00:00:56,723
ASTRONAUTS COULD DEVELOP

31
00:00:56,723 --> 00:00:57,957
SOMETHING CALLED MUSCLE

32
00:00:57,957 --> 00:00:59,592
ATROPHY, WHERE OUR MUSCLES

33
00:00:59,592 --> 00:01:01,594
BECOME WEAK FROM LACK OF USE.

34
00:01:01,594 --> 00:01:02,762
EACH BONE IN YOUR BODY

35
00:01:02,762 --> 00:01:04,330
IS MADE OF CELLS, TOO.

36
00:01:04,330 --> 00:01:06,199
A HEALTHY BONE HAS MORE DENSITY

37
00:01:06,199 --> 00:01:07,934
THAN AN UNHEALTHY BONE.

38
00:01:07,934 --> 00:01:09,369

WEAKENED BONES CAN LEAD TO

39

00:01:09,369 --> 00:01:11,905

A DISEASE CALLED OSTEOPOROSIS.

40

00:01:11,905 --> 00:01:13,506

FORTUNATELY, OUR SCIENTISTS

41

00:01:13,506 --> 00:01:14,941

AT NASA HAVE FIGURED OUT

42

00:01:14,941 --> 00:01:16,242

ONE WAY TO KEEP ASTRONAUTS

43

00:01:16,242 --> 00:01:17,577

HEALTHY AND STRONG--

44

00:01:17,577 --> 00:01:20,079

IT'S CALLED EXERCISE.

45

00:01:20,079 --> 00:01:21,147

LET'S TAKE A LOOK AT

46

00:01:21,147 --> 00:01:22,882

HOW ASTRONAUTS EXERCISE

47

00:01:22,882 --> 00:01:24,384

IN SPACE.

48

00:01:24,384 --> 00:01:25,718

THIS MACHINE HERE IS

49

00:01:25,718 --> 00:01:27,587

THE ADVANCED RESISTIVE EXERCISE

50

00:01:27,587 --> 00:01:29,956

DEVICE, BUT WE CALL IT ARED.

51
00:01:29,956 --> 00:01:31,224
IT SIMULATES FREE WEIGHT

52
00:01:31,224 --> 00:01:33,193
EXERCISES IN NORMAL GRAVITY

53
00:01:33,193 --> 00:01:34,294
TO WORK ALL THE MAJOR

54
00:01:34,294 --> 00:01:35,228
MUSCLE GROUPS.

55
00:01:35,228 --> 00:01:36,429
ARED'S PRIMARY GOAL IS

56
00:01:36,429 --> 00:01:37,997
TO MAINTAIN OUR MUSCLE STRENGTH

57
00:01:37,997 --> 00:01:39,566
AND MASS SO THAT WE HAVE

58
00:01:39,566 --> 00:01:40,967
LESS OF A RECOVERY PERIOD

59
00:01:40,967 --> 00:01:42,869
WHEN WE LAND BACK ON EARTH.

60
00:01:42,869 --> 00:01:43,970
ALL RIGHT, SO THERE'S

61
00:01:43,970 --> 00:01:45,238
LOOKING AT LIFTING, BUT

62
00:01:45,238 --> 00:01:47,273
WHAT ABOUT A LITTLE CARDIO?

63
00:01:47,273 --> 00:01:49,008

WE HAVE A TREADMILL FOR THAT.

64

00:01:49,008 --> 00:01:50,243

LET'S CHECK IT OUT!

65

00:01:50,243 --> 00:01:54,481

[MUSIC]

66

00:01:54,481 --> 00:01:55,615

STAYING PHYSICALLY ACTIVE

67

00:01:55,615 --> 00:01:57,350

HELPS BOTH ASTRONAUTS IN SPACE

68

00:01:57,350 --> 00:01:58,685

AND HUMANS ON THE GROUND

69

00:01:58,685 --> 00:02:00,286

TO STAY HEALTHY, AND

70

00:02:00,286 --> 00:02:01,955

IT PREVENTS MUSCLE ATROPHY

71

00:02:01,955 --> 00:02:04,858

AND OSTEOPOROSIS.

72

00:02:04,858 --> 00:02:06,259

NOW YOU CAN TRY THE ACTIVITY

73

00:02:06,259 --> 00:02:07,594

CONNECTED TO THIS VIDEO

74

00:02:07,594 --> 00:02:08,895

TO LEARN MORE ABOUT

75

00:02:08,895 --> 00:02:10,630

MUSCLE AND BONE CELLS.

76

00:02:10,630 --> 00:02:12,098

I'M JOE ACABA, AND I HOPE

77

00:02:12,098 --> 00:02:13,166

YOU ENJOYED LEARNING ABOUT

78

00:02:13,166 --> 00:02:14,968

EXERCISE ON THE INTERNATIONAL

79

00:02:14,968 --> 00:02:16,102

SPACE STATION.