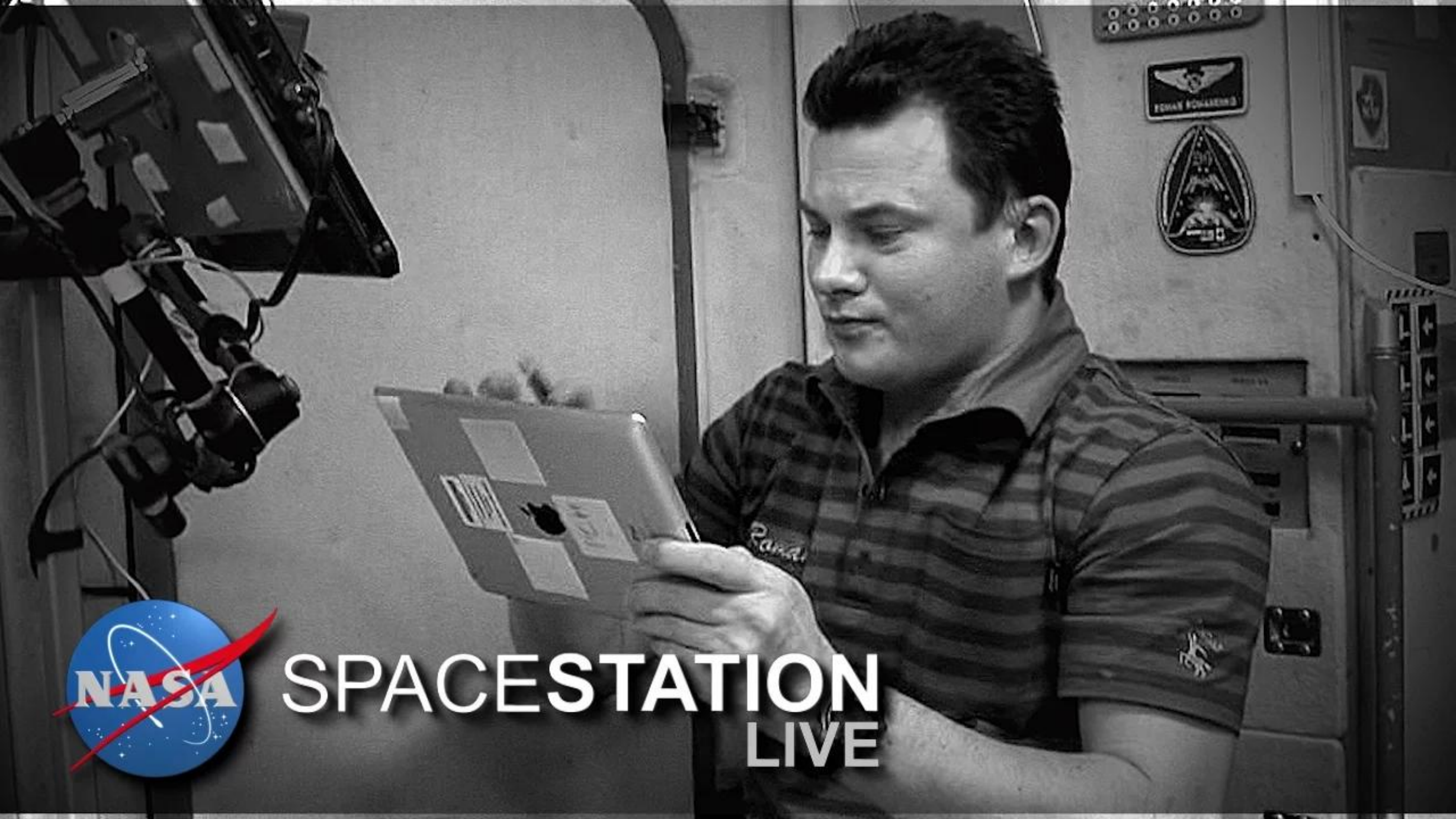
NASA
SPACESTATION
LIVE

1
00:00:08,710 --> 00:00:06,789
some of the most common skills we use on

2
00:00:10,390 --> 00:00:08,720
earth prove to be much more tedious in

3
00:00:12,230 --> 00:00:10,400
microgravity but they are skills that

4
00:00:14,390 --> 00:00:12,240
astronauts must be able to master as we

5
00:00:16,550 --> 00:00:14,400
journey farther into space an experiment

6
00:00:19,109 --> 00:00:16,560
called fine motor skills is the first to

7
00:00:21,029 --> 00:00:19,119
measure long-term microgravity exposure

8
00:00:23,269 --> 00:00:21,039
different phases of adaptation and

9
00:00:25,349 --> 00:00:23,279
sensory motor recovery after returning

10
00:00:26,790 --> 00:00:25,359
to earth my colleague laurie meggs at

11
00:00:28,950 --> 00:00:26,800
the marshall space flight center in

12
00:00:30,870 --> 00:00:28,960
huntsville alabama spoke with christina

13
00:00:32,790 --> 00:00:30,880

holden the principal investigator of

14
00:00:34,870 --> 00:00:32,800
this study to learn more

15
00:00:36,630 --> 00:00:34,880
we're interested in finding out if there

16
00:00:39,190 --> 00:00:36,640
are any effects of long-duration

17
00:00:41,030 --> 00:00:39,200
microgravity on fine motor skills

18
00:00:43,110 --> 00:00:41,040
we're particularly interested in looking

19
00:00:45,270 --> 00:00:43,120
at advanced technologies like touch

20
00:00:46,549 --> 00:00:45,280
screens and gesture devices because we

21
00:00:48,310 --> 00:00:46,559
think those are the kind of devices that

22
00:00:50,229 --> 00:00:48,320
crew members will be using on future

23
00:00:51,830 --> 00:00:50,239
missions and we want to make sure that

24
00:00:53,910 --> 00:00:51,840
if they're on a long duration journey to

25
00:00:55,990 --> 00:00:53,920
mars for example that they're able to

26
00:00:58,229 --> 00:00:56,000
interact accurately with those devices

27
00:00:59,510 --> 00:00:58,239
once they go to the planet surface what

28
00:01:00,549 --> 00:00:59,520
types of fine motor skills are we

29
00:01:03,270 --> 00:01:00,559
talking about

30
00:01:06,310 --> 00:01:03,280
so we are doing the study on a apple

31
00:01:08,149 --> 00:01:06,320
ipad and using the touch screen and so

32
00:01:10,230 --> 00:01:08,159
we have four different tasks that are

33
00:01:12,310 --> 00:01:10,240
part of the investigation they include

34
00:01:14,870 --> 00:01:12,320
things like pointing to a target

35
00:01:16,950 --> 00:01:14,880
dragging to a target shape tracing a

36
00:01:19,190 --> 00:01:16,960
circle in square shape tracing and then

37
00:01:22,070 --> 00:01:19,200
a pinch rotate task which is a

38
00:01:23,749 --> 00:01:22,080

multi-touch task for the touch screen

39
00:01:24,950 --> 00:01:23,759
why do we need to know this

40
00:01:27,350 --> 00:01:24,960
well so

41
00:01:30,069 --> 00:01:27,360
crew members more and more are using

42
00:01:31,749 --> 00:01:30,079
ipads on board iss and

43
00:01:34,230 --> 00:01:31,759
so they're using a lot of touch screen

44
00:01:37,350 --> 00:01:34,240
interfaces and a lot of times if

45
00:01:39,270 --> 00:01:37,360
interfaces aren't designed well

46
00:01:41,109 --> 00:01:39,280
there are a lot of errors and so we want

47
00:01:42,789 --> 00:01:41,119
to make sure we know if there's any

48
00:01:44,950 --> 00:01:42,799
performance decrements after being in

49
00:01:46,310 --> 00:01:44,960
microgravity for a long time that we

50
00:01:48,069 --> 00:01:46,320
might need to accommodate with a

51
00:01:49,670 --> 00:01:48,079
different type of design

52
00:01:51,990 --> 00:01:49,680
would this lead to new designs for our

53
00:01:54,149 --> 00:01:52,000
ipads yes we're very excited about that

54
00:01:57,670 --> 00:01:54,159
actually the particular application we

55
00:01:59,910 --> 00:01:57,680
think it has is for populations who do

56
00:02:02,230 --> 00:01:59,920
have problems with fine motor skills so

57
00:02:04,550 --> 00:02:02,240
we're looking into using the test

58
00:02:06,789 --> 00:02:04,560
battery that we've developed for

59
00:02:08,710 --> 00:02:06,799
elderly populations or brain injured or

60
00:02:10,550 --> 00:02:08,720
parkinson's patients

61
00:02:12,710 --> 00:02:10,560
who need to be tested you know it could

62
00:02:13,750 --> 00:02:12,720
be used as a diagnostic tool we also

63
00:02:15,910 --> 00:02:13,760

think it could be used as a

64
00:02:18,390 --> 00:02:15,920
rehabilitation tool

65
00:02:19,990 --> 00:02:18,400
that's really cool it's really cool

66
00:02:21,589 --> 00:02:20,000
we have a couple of universities that

67
00:02:23,350 --> 00:02:21,599
are very interested in working with us

68
00:02:24,790 --> 00:02:23,360
to kind of move the product in that

69
00:02:27,430 --> 00:02:24,800
direction

70
00:02:29,110 --> 00:02:27,440
so have you done other studies like this

71
00:02:31,190 --> 00:02:29,120
we've done a number of ground studies

72
00:02:32,869 --> 00:02:31,200
looking at fine motor skills but this is

73
00:02:35,030 --> 00:02:32,879
really the first flight study that we've

74
00:02:37,270 --> 00:02:35,040
done pretty exciting that you can do it

75
00:02:39,430 --> 00:02:37,280
for a year right it is so exciting you

76
00:02:41,350 --> 00:02:39,440
know we come from human factors and we

77
00:02:43,190 --> 00:02:41,360
don't get to do a lot of flight studies

78
00:02:45,670 --> 00:02:43,200
and so we are thrilled to be part of the

79
00:02:48,070 --> 00:02:45,680
one year mission this is a really a

80
00:02:49,990 --> 00:02:48,080
great opportunity to complete a data set

81
00:02:51,830 --> 00:02:50,000
that is a little bit lacking so there's

82
00:02:52,949 --> 00:02:51,840
been some data in the past on fine motor

83
00:02:54,710 --> 00:02:52,959
skills

84
00:02:57,750 --> 00:02:54,720
not interacting with the kind of devices

85
00:03:00,229 --> 00:02:57,760
that we're using but also um with a lot

86
00:03:01,589 --> 00:03:00,239
of lapses in the data you know over the

87
00:03:03,670 --> 00:03:01,599
mission and so this is a great

88
00:03:05,670 --> 00:03:03,680

opportunity for us to get data

89
00:03:07,190 --> 00:03:05,680
pre-flight throughout a whole one-year