



**SPACESTATION
LIVE**

1
00:00:09,509 --> 00:00:07,430
so our guts can tell us a lot about what

2
00:00:11,830 --> 00:00:09,519
stresses us as well as several other

3
00:00:13,830 --> 00:00:11,840
things one study taking place right now

4
00:00:16,070 --> 00:00:13,840
on board the stations getting a look at

5
00:00:18,550 --> 00:00:16,080
the guts of a couple of astronauts to

6
00:00:20,470 --> 00:00:18,560
give an insight into the bacteria in

7
00:00:21,990 --> 00:00:20,480
that area which is known as the

8
00:00:24,150 --> 00:00:22,000
microbiome

9
00:00:26,390 --> 00:00:24,160
and to see how space flight affects it

10
00:00:28,950 --> 00:00:26,400
they also have a ground subject as well

11
00:00:31,269 --> 00:00:28,960
as this is a part of scott kelly and his

12
00:00:32,950 --> 00:00:31,279
twin brother mark's twin study nasa

13
00:00:34,790 --> 00:00:32,960

commentator lori meigs caught up with

14

00:00:36,470 --> 00:00:34,800

the co-investigator of this experiment

15

00:00:41,430 --> 00:00:36,480

to learn more

16

00:00:43,430 --> 00:00:41,440

i'm looking at the bacteria in the gut

17

00:00:46,389 --> 00:00:43,440

of both twins

18

00:00:47,590 --> 00:00:46,399

longitudinally over time

19

00:00:49,750 --> 00:00:47,600

while

20

00:00:51,750 --> 00:00:49,760

one is going to be spending a year in

21

00:00:53,750 --> 00:00:51,760

space and one will be

22

00:00:56,310 --> 00:00:53,760

on the ground

23

00:00:57,430 --> 00:00:56,320

having the twins is very powerful

24

00:01:01,029 --> 00:00:57,440

because

25

00:01:04,390 --> 00:01:01,039

there's growing data that suggests that

26
00:01:07,030 --> 00:01:04,400
the uh genetic makeup of the individual

27
00:01:09,510 --> 00:01:07,040
human actually has a very strong

28
00:01:12,390 --> 00:01:09,520
influence on some of the bacteria that

29
00:01:15,270 --> 00:01:12,400
live in their gut so some

30
00:01:19,109 --> 00:01:15,280
genetic types of humans are better hosts

31
00:01:21,510 --> 00:01:19,119
for some genetic types of bacteria

32
00:01:23,910 --> 00:01:21,520
so we call this microbiome that's called

33
00:01:26,469 --> 00:01:23,920
the microbiome right

34
00:01:28,870 --> 00:01:26,479
microbiome would be all of the microbes

35
00:01:31,670 --> 00:01:28,880
living in a particular

36
00:01:34,069 --> 00:01:31,680
environment in our case it's the gi

37
00:01:36,390 --> 00:01:34,079
tract

38
00:01:38,550 --> 00:01:36,400

but we're focusing really only on the

39

00:01:41,030 --> 00:01:38,560

bacteria which is the vast majority of

40

00:01:43,350 --> 00:01:41,040

the microbes in the gut anyway

41

00:01:45,270 --> 00:01:43,360

we've had other microbiome studies as

42

00:01:46,870 --> 00:01:45,280

well what makes this one different is it

43

00:01:48,950 --> 00:01:46,880

because of the twin situation well the

44

00:01:51,990 --> 00:01:48,960

twins makes it unique

45

00:01:54,389 --> 00:01:52,000

i think the longitudinal aspect we're

46

00:01:55,510 --> 00:01:54,399

going to have an individual in space for

47

00:01:57,510 --> 00:01:55,520

a year

48

00:01:59,749 --> 00:01:57,520

and be able to track what changes are

49

00:02:02,149 --> 00:01:59,759

happening over that course of time so

50

00:02:04,950 --> 00:02:02,159

that's another unique aspect

51
00:02:06,550 --> 00:02:04,960
we really don't know what's

52
00:02:09,510 --> 00:02:06,560
going to happen

53
00:02:11,270 --> 00:02:09,520
with the bacterial diversity

54
00:02:13,589 --> 00:02:11,280
in the gut um

55
00:02:15,430 --> 00:02:13,599
over that long of a period of time what

56
00:02:16,229 --> 00:02:15,440
do we learn from studying this

57
00:02:19,110 --> 00:02:16,239
well

58
00:02:23,830 --> 00:02:19,120
there are a lot of unique stressors but

59
00:02:24,869 --> 00:02:23,840
stress is not unique to space so i think

60
00:02:27,350 --> 00:02:24,879
having

61
00:02:30,070 --> 00:02:27,360
an idea of what's going on with the

62
00:02:33,110 --> 00:02:30,080
bacteria in the gut

63
00:02:36,229 --> 00:02:33,120

in response to stress and having related

64

00:02:39,430 --> 00:02:36,239

measures in terms of

65

00:02:41,509 --> 00:02:39,440

sampling at the same periods of time

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00:02:43,110 --> 00:02:41,519

having those same

67

00:02:48,390 --> 00:02:43,120

time points

68

00:02:52,070 --> 00:02:49,589

mood

69

00:02:52,949 --> 00:02:52,080

other measures of health

70

00:02:54,470 --> 00:02:52,959

uh

71

00:02:56,470 --> 00:02:54,480

blood pressure

72

00:02:58,949 --> 00:02:56,480

you know what's going on in their lives

73

00:03:00,949 --> 00:02:58,959

are they sleep deprived

74

00:03:03,430 --> 00:03:00,959

having all of those

75

00:03:06,550 --> 00:03:03,440

data to relate to the microbiome will

76

00:03:07,350 --> 00:03:06,560

give us a much richer picture of how

77

00:03:13,830 --> 00:03:07,360

the

78

00:03:16,149 --> 00:03:13,840

and that would be

79

00:03:19,030 --> 00:03:16,159

wonderful information to have for human

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00:03:20,790 --> 00:03:19,040

health on earth as well as looking

81

00:03:24,309 --> 00:03:20,800

towards longer term

82

00:03:26,550 --> 00:03:24,319

space flight like going to mars

83

00:03:29,270 --> 00:03:26,560

you're a university professor

84

00:03:31,350 --> 00:03:29,280

you have a space station experiment an

85

00:03:32,149 --> 00:03:31,360

international space isn't that wonderful

86

00:03:34,390 --> 00:03:32,159

yeah

87

00:03:36,390 --> 00:03:34,400

so oh that's so exciting i mean when we

88

00:03:38,710 --> 00:03:36,400

found out our project had been selected

89

00:03:40,949 --> 00:03:38,720

for one of these twin studies

90

00:03:42,949 --> 00:03:40,959

you know we were just thrilled beyond

91

00:03:44,710 --> 00:03:42,959

words we couldn't stop telling people

92

00:03:46,949 --> 00:03:44,720

we're stopping colleagues in the

93

00:03:49,350 --> 00:03:46,959

hallways saying we're going to nasa

94

00:03:51,670 --> 00:03:49,360

we're getting a nasa project i mean it's

95

00:03:54,070 --> 00:03:51,680

it's just such a huge thrill and the

96

00:03:56,309 --> 00:03:54,080

nasa people have been so

97

00:03:59,509 --> 00:03:56,319

wonderful to work with they've been so

98

00:04:01,910 --> 00:03:59,519

engaged involved at every step of the