

THE HUMAN CHALLENGES OF

MARS

RADIATION

1
00:00:07,510 --> 00:00:05,829
radiation

2
00:00:09,270 --> 00:00:07,520
right now it's the biggest challenge

3
00:00:11,749 --> 00:00:09,280
we'll have to overcome on our journey to

4
00:00:14,390 --> 00:00:11,759
mars earth's magnetic field protects us

5
00:00:17,430 --> 00:00:14,400
from cosmic radiation but once we travel

6
00:00:19,670 --> 00:00:17,440
beyond that threshold all bets are off a

7
00:00:21,750 --> 00:00:19,680
round trip mission to mars will take up

8
00:00:23,269 --> 00:00:21,760
to three years so that could mean up to

9
00:00:25,990 --> 00:00:23,279
three years of constant exposure to

10
00:00:28,790 --> 00:00:26,000
space radiation this level of exposure

11
00:00:32,229 --> 00:00:28,800
creates potential long-term health risks

12
00:00:34,549 --> 00:00:32,239
dna damage decreased cognitive ability

13
00:00:36,630 --> 00:00:34,559

long-term cardiovascular health problems

14

00:00:38,470 --> 00:00:36,640

and even the possibility of developing

15

00:00:42,470 --> 00:00:38,480

certain kinds of cancers

16

00:00:46,150 --> 00:00:43,990

but we're working to minimize these

17

00:00:48,470 --> 00:00:46,160

risks today aboard the international

18

00:00:49,830 --> 00:00:48,480

space station we're using new sensors to

19

00:00:51,110 --> 00:00:49,840

improve our knowledge of cosmic

20

00:00:53,270 --> 00:00:51,120

radiation

21

00:00:54,869 --> 00:00:53,280

and back on earth we're working on ways

22

00:00:56,310 --> 00:00:54,879

to optimize shielding for future

23

00:00:59,349 --> 00:00:56,320

spacecraft

24

00:01:01,029 --> 00:00:59,359

we're going to mars it won't be easy but

25

00:01:03,430 --> 00:01:01,039

because of the research we're doing

26

00:01:05,590 --> 00:01:03,440

today on the ground and aboard the