



**AN**  
**IMMORTAL**  
**WORM**

1  
00:00:03,710 --> 00:00:02,090  
they tear themselves in half each half

2  
00:00:05,210 --> 00:00:03,720  
regenerates the missing piece and now

3  
00:00:06,889 --> 00:00:05,220  
you've got two that's how they reproduce

4  
00:00:09,470 --> 00:00:06,899  
so if you're going to do that what you

5  
00:00:11,330 --> 00:00:09,480  
end up avoiding is weissman's barrier

6  
00:00:12,770 --> 00:00:11,340  
this idea that when we get mutations in

7  
00:00:14,990 --> 00:00:12,780  
our body our children don't inherit

8  
00:00:17,090 --> 00:00:15,000  
those mutations right so this means that

9  
00:00:19,310 --> 00:00:17,100  
any mutation that doesn't kill the stem

10  
00:00:21,230 --> 00:00:19,320  
cell in the body gets Amplified as that

11  
00:00:24,050 --> 00:00:21,240  
cell contributes to regrowing the worm

12  
00:00:25,429 --> 00:00:24,060  
so every as a result of this for for 400

13  
00:00:27,589 --> 00:00:25,439

million years these planaria have

14

00:00:29,810 --> 00:00:27,599

accumulated mutations their genomes are

15

00:00:31,849 --> 00:00:29,820

an incredible mess their cells are

16

00:00:33,290 --> 00:00:31,859

basically mixoploid that meaning meaning

17

00:00:34,370 --> 00:00:33,300

they're like a tumor every cell has a

18

00:00:36,170 --> 00:00:34,380

different number of chromosomes

19

00:00:38,450 --> 00:00:36,180

potentially they're just they just look

20

00:00:40,610 --> 00:00:38,460

look you know it just looks horrible as

21

00:00:43,310 --> 00:00:40,620

an end result you've got an animal that

22

00:00:46,250 --> 00:00:43,320

is Immortal incredibly good at