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00:00:00,000 --> 00:00:07,000

Remember, do not try anything you are about to see at home.

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00:00:07,000 --> 00:00:17,000

On this episode of MythBusters, Adam and Jamie fight the bullet on an all-time classic myth.

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00:00:17,000 --> 00:00:19,000

I'm told it's only going to hurt a lot.

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00:00:19,000 --> 00:00:22,000

Do some people tolerate pain better than others?

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00:00:22,000 --> 00:00:23,000

Ow.

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00:00:23,000 --> 00:00:25,000

From natural redheads.

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00:00:25,000 --> 00:00:27,000

I am proud to be one of them.

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00:00:27,000 --> 00:00:31,000

Men versus women. Which group has the right stuff?

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00:00:31,000 --> 00:00:33,000

Those are some tough mothers.

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00:00:33,000 --> 00:00:35,000

And is swearing really a cure?

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00:00:35,000 --> 00:00:37,000

Or just a curse?

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00:00:37,000 --> 00:00:39,000

Oh, f\*\*\*, sweet relief.

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00:00:39,000 --> 00:00:44,000

Meanwhile, Tori Grant and Carrie tackle the myth of ballistic barbecues.

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00:00:44,000 --> 00:00:45,000

Let's torch this thing!

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00:00:45,000 --> 00:00:48,000

To see if a propane tank that's feeling the heat...

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00:00:48,000 --> 00:00:50,000

We have the best jobs ever!

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00:00:50,000 --> 00:00:54,000

...is really a rocket just biding its time.

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00:00:54,000 --> 00:00:56,000

Two, one.

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00:01:01,000 --> 00:01:03,000

Who are the MythBusters?

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00:01:03,000 --> 00:01:04,000

Adam Savage.

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00:01:04,000 --> 00:01:07,000

Is my missing an eyebrow?

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00:01:07,000 --> 00:01:08,000

And Jamie Heineman.

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00:01:08,000 --> 00:01:10,000

Relax. This one hurt a bit.

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00:01:10,000 --> 00:01:14,000

Between them more than 30 years of special effects experience...

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00:01:14,000 --> 00:01:16,000

I ate a radio for science!

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00:01:16,000 --> 00:01:18,000

...joining them...

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00:01:18,000 --> 00:01:19,000

Tori Bellachie.

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00:01:19,000 --> 00:01:20,000

Hello, fire!

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00:01:20,000 --> 00:01:22,000

Grant Imahara.

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00:01:22,000 --> 00:01:23,000

Tori!

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00:01:23,000 --> 00:01:24,000

And Carrie Byron.

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00:01:24,000 --> 00:01:26,000

He's terrifying!

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00:01:26,000 --> 00:01:30,000

They don't just tell the myth, they put them to the test.

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00:01:37,000 --> 00:01:40,000

First up, a myth for the masochists.

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00:01:44,000 --> 00:01:45,000

Paaay!

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00:01:45,000 --> 00:01:47,000

Okay, that's creepy. What are you doing?

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00:01:47,000 --> 00:01:50,000

Don't you remember when Spock was talking to the lava months?

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00:01:50,000 --> 00:01:51,000

Okay, never mind.

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00:01:51,000 --> 00:01:54,000

We are doing a whole set of stories specifically about pain.

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00:01:54,000 --> 00:01:56,000

I've got one. You're a pain in the...

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00:01:56,000 --> 00:01:59,000

Okay, nope. That's not one of the ones we're doing.

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00:01:59,000 --> 00:02:00,000

We have three stories.

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00:02:00,000 --> 00:02:04,000

One is that women can stand more pain than men.

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00:02:04,000 --> 00:02:07,000

Two is that redheads can't stand very much pain at all.

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00:02:07,000 --> 00:02:09,000

And the third, and I think you're gonna like this,

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00:02:09,000 --> 00:02:13,000

is that supposedly cursing increases your ability to withstand pain.

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00:02:13,000 --> 00:02:15,000

Well, I'm bleepin' love that.

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00:02:15,000 --> 00:02:16,000

I thought you would.

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00:02:17,000 --> 00:02:21,000

Now, Adam has more than a passing acquaintance with pain.

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00:02:21,000 --> 00:02:25,000

And here's just a few of his greatest hits.

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00:02:25,000 --> 00:02:29,000

But Adam himself hasn't a clue if his tolerance for pain

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00:02:29,000 --> 00:02:31,000

is any better than the next guy.

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00:02:31,000 --> 00:02:34,000

We're gonna have to stitch your mouth shut, I think, for this.

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00:02:34,000 --> 00:02:36,000

Meh, you wish.

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00:02:36,000 --> 00:02:37,000

So how's this gonna work?

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00:02:37,000 --> 00:02:40,000

Well, clearly we're gonna have to subject a lot of people to pain

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00:02:40,000 --> 00:02:42,000

in order to test these stories.

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00:02:42,000 --> 00:02:43,000

I can do that.

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00:02:43,000 --> 00:02:47,000

Well, I'm sure that you have some fascinating ideas.

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00:02:47,000 --> 00:02:49,000

The fact is that professional scientists

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00:02:49,000 --> 00:02:51,000

have been studying this subject for years,

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00:02:51,000 --> 00:02:53,000

and I think it would behoove us to go to them

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00:02:53,000 --> 00:02:55,000

and ask them what techniques they're using.

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00:02:55,000 --> 00:02:58,000

Because remember, we've got to do this without damaging anybody.

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00:02:58,000 --> 00:03:00,000

Oh. Okay.

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00:03:09,000 --> 00:03:12,000

Dr. Chew, how is it you know so much about pain?

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00:03:12,000 --> 00:03:15,000

Well, I'm an anesthesiologist, but I'm also a pain researcher.

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00:03:15,000 --> 00:03:17,000

And I have a lab here at Stanford

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00:03:17,000 --> 00:03:20,000

where I work on discovering new therapies and treatments for pain.

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00:03:20,000 --> 00:03:21,000

In order to do that work,

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00:03:21,000 --> 00:03:24,000

I need to be able to reliably induce pain in my patients.

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00:03:24,000 --> 00:03:26,000

With Dr. Chew's help,

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00:03:26,000 --> 00:03:30,000

we'll road test four kinds of clinical torture

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00:03:30,000 --> 00:03:33,000

to find out the best one for testing the myths.

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00:03:33,000 --> 00:03:36,000

They probably won't cause any real damage.

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00:03:36,000 --> 00:03:38,000

First up is heat.

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00:03:38,000 --> 00:03:41,000

This little black box here is actually a precisely controllable heater

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00:03:41,000 --> 00:03:44,000

which soon we will strap to Jamie's arm

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00:03:44,000 --> 00:03:47,000

and increase the heat until he can't stand it anymore.

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00:03:47,000 --> 00:03:49,000

What could be better than that?

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00:03:49,000 --> 00:03:51,000

Hi, Jamie. Hello.

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00:03:51,000 --> 00:03:54,000

Jamie's told that his arm will get steadily hotter

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00:03:54,000 --> 00:03:56,000

over the next 60 seconds,

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00:03:56,000 --> 00:03:59,000

or until he can't stand it no more.

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00:03:59,000 --> 00:04:01,000

So here's the button that you'll press.

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00:04:01,000 --> 00:04:03,000

This goes in your right hand.

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00:04:03,000 --> 00:04:06,000

So either red button will turn off the heat immediately.

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00:04:06,000 --> 00:04:08,000

Okay.

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00:04:08,000 --> 00:04:14,000

Abby also requests that he speaks out the instant he first feels real pain.

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00:04:14,000 --> 00:04:18,000

And that would qualify as pain.

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00:04:18,000 --> 00:04:20,000

Ow.

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00:04:20,000 --> 00:04:22,000

But this is Jamie we're watching.

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00:04:22,000 --> 00:04:25,000

A man so tough, he occasionally rusts.

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00:04:25,000 --> 00:04:27,000

So that maxed out.

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00:04:27,000 --> 00:04:29,000

Well, thank you. That was fun.

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00:04:29,000 --> 00:04:31,000

Thank you.

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00:04:31,000 --> 00:04:34,000

So here's the question for our man of steel.

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00:04:34,000 --> 00:04:37,000

Is this what we're shopping for?

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00:04:37,000 --> 00:04:40,000

I'd say that was quite painful and it did leave a mark.

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00:04:40,000 --> 00:04:43,000

Whether we want to subject a bunch of people to that,

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00:04:43,000 --> 00:04:45,000

I'm not so sure at this point.

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00:04:45,000 --> 00:04:49,000

Next up, we'll change lab rats and methods.

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00:04:49,000 --> 00:04:52,000

This one promises pain like you wouldn't believe.

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00:04:52,000 --> 00:04:55,000

I am about to have capsaicin,

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00:04:55,000 --> 00:04:58,000

which is the primary element in very spicy peppers,

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00:04:58,000 --> 00:05:01,000

injected just under my skin.

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00:05:01,000 --> 00:05:03,000

I'm told it's only going to hurt a lot.

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00:05:03,000 --> 00:05:06,000

Now we've already had an excruciating brush with capsaicin.

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00:05:06,000 --> 00:05:12,000

When Tori, Grant and Carrie bravely set out to find a cure for hot chili mouth.

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00:05:12,000 --> 00:05:15,000

If capsaicin does that to your tongue,

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00:05:15,000 --> 00:05:18,000

just imagine the pain from a hypodermic injection.

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00:05:18,000 --> 00:05:20,000

Adam, okay.

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00:05:20,000 --> 00:05:22,000

Now what I want you to do is not move.

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00:05:22,000 --> 00:05:24,000

Okay.

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00:05:24,000 --> 00:05:26,000

That'll be your instinct, but do not move.

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00:05:26,000 --> 00:05:28,000

Okay, here we go.

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00:05:28,000 --> 00:05:30,000

Ow.

118

00:05:30,000 --> 00:05:32,000

Oh, wow.

119

00:05:32,000 --> 00:05:34,000

On a scale of zero to ten?

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00:05:34,000 --> 00:05:36,000

Ah, God.

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00:05:36,000 --> 00:05:38,000

Okay, maybe a six?

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00:05:38,000 --> 00:05:41,000

It really feels like I'm being burnt.

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00:05:41,000 --> 00:05:45,000

See, I'm not used to feeling a pain that's not actually causing me damage.

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00:05:45,000 --> 00:05:49,000

So I really want to like move and run water on it or something.

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00:05:49,000 --> 00:05:52,000

Yeah, you want to see something too to make it worth it, right?

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00:05:52,000 --> 00:05:54,000

Oh, wow.

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00:05:54,000 --> 00:05:58,000

On a Mythbusters pain scale, this is not quite as bad as getting my tongue pierced.

128

00:05:58,000 --> 00:06:00,000

Okay, go.

129

00:06:00,000 --> 00:06:02,000

And out.

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00:06:02,000 --> 00:06:04,000

I'll be right back until it goes away after ten minutes,

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00:06:04,000 --> 00:06:09,000

but I don't think I'd want to do this to a bunch of test subjects in our shop.

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00:06:09,000 --> 00:06:11,000

I see this as a no-go.

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00:06:11,000 --> 00:06:13,000

Okay, let me go now.

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00:06:13,000 --> 00:06:18,000

So while Adam recovers, it's Jamie's turn back in the hot seat.

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00:06:18,000 --> 00:06:21,000

Next up is electric pain.

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00:06:21,000 --> 00:06:25,000

Soon, a pair of electrodes will be strapped to Jamie's arm,

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00:06:25,000 --> 00:06:28,000

touching his skin, and a current will be run through them.

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00:06:28,000 --> 00:06:31,000

This will irritate his nerves and cause a local pain response,

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00:06:31,000 --> 00:06:33,000

and then, that's not all.

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00:06:33,000 --> 00:06:36,000

Then, this device, called a von Freiherr,

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00:06:36,000 --> 00:06:41,000

will be poked around the painful area to map the area of sensitivity.

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00:06:41,000 --> 00:06:45,000

If Jamie has any facial expressions at all, this is likely to be thrilling.

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00:06:45,000 --> 00:06:49,000

Dr. Chew marks the shape of a star on Jamie's left forearm.

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00:06:49,000 --> 00:06:54,000

The plan is to prod him when this is all over to test his sensitivity.

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00:06:54,000 --> 00:06:56,000

That's pretty.

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00:06:56,000 --> 00:06:59,000

Okay, Jamie, I'm going to hook you up to this electrical current,

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00:06:59,000 --> 00:07:02,000

and I'm going to let it run for 30 minutes, and then I'll be back.

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00:07:02,000 --> 00:07:06,000

That's a long time for Jamie to slowly suffer.

149

00:07:06,000 --> 00:07:11,000

Wow, this is kind of like being hooked up to an electric fence for a half hour.

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00:07:11,000 --> 00:07:15,000

It's not excruciating, but it's not very nice.

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00:07:15,000 --> 00:07:20,000

In due course, Dr. Chew returns to inflict some scientific stabbing.

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00:07:20,000 --> 00:07:23,000

Well, I have a great idea now of your overall electrical pain threshold

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00:07:23,000 --> 00:07:25,000

and your area of sensitivity.

154

00:07:25,000 --> 00:07:27,000

It was just what this test was designed to measure.

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00:07:27,000 --> 00:07:30,000

Okay, so that means we can turn it off now?

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00:07:30,000 --> 00:07:34,000

So now to the fourth and final torment.

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00:07:34,000 --> 00:07:37,000

We all know that extreme cold can kill.

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00:07:37,000 --> 00:07:39,000

It can also hurt like hell.

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00:07:39,000 --> 00:07:42,000

Adam's going to be putting his hand all the way down into this ice bath

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00:07:42,000 --> 00:07:44,000

where it's just above freezing.

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00:07:44,000 --> 00:07:47,000

At first it'll feel cold, then he'll feel pain,

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00:07:47,000 --> 00:07:50,000

and then when he just can't stand it anymore, he'll pull his hand out.

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00:07:50,000 --> 00:07:54,000

Now, this is called the cold presser test,

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00:07:54,000 --> 00:08:01,000

and it's the oldest and most well-established pain induction technique used in pain research.

165

00:08:01,000 --> 00:08:04,000

The temperature is just above freezing,

166

00:08:04,000 --> 00:08:06,000

and the rules are the same as before.

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00:08:06,000 --> 00:08:10,000

Just hang on as long as you can.

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00:08:10,000 --> 00:08:14,000

Look, it's one thing to read about a technique like immersing your hand in ice water

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00:08:14,000 --> 00:08:16,000

and quite another to do it,

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00:08:16,000 --> 00:08:19,000

and the most surprising thing, and I guess this shouldn't be surprising to me,

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00:08:19,000 --> 00:08:20,000

is that it hurts.

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00:08:20,000 --> 00:08:23,000

It hurts right away, and it's quite intense.

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00:08:23,000 --> 00:08:27,000

Adam would like to go the distance, but it's not going to happen.

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00:08:27,000 --> 00:08:28,000

No, here we go.

175

00:08:28,000 --> 00:08:30,000

That's it.

176

00:08:30,000 --> 00:08:32,000

Ow, that's intense.

177

00:08:32,000 --> 00:08:34,000

Good job.

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00:08:34,000 --> 00:08:40,000

Adam lasted just 59 seconds, so we know that it hurts like the devil.

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00:08:40,000 --> 00:08:44,000

After sampling for distinct kinds of supervised soreness,

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00:08:44,000 --> 00:08:47,000

all that remains is to choose their poison.

181

00:08:47,000 --> 00:08:48,000

Do you feel more manly now?

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00:08:48,000 --> 00:08:49,000

A little.

183

00:08:49,000 --> 00:08:50,000

A little bit.

184

00:08:50,000 --> 00:08:52,000

Shall we recap what we learned at Stanford?

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00:08:52,000 --> 00:08:55,000

I think we need to throw out chili peppers and electricity,

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00:08:55,000 --> 00:09:00,000

because they're designed to test sensitivity, not how much pain you can take.

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00:09:00,000 --> 00:09:03,000

Okay, that leaves heat and ice.

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00:09:03,000 --> 00:09:07,000

I'm going with ice, because it's been around the longest, and it's the most widely used.

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00:09:07,000 --> 00:09:08,000

Ice it is.

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00:09:08,000 --> 00:09:13,000

Well, let's start by testing whether or not women actually do have a higher pain tolerance than men.

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00:09:13,000 --> 00:09:14,000

Okay.

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00:09:16,000 --> 00:09:21,000

So it's gloves off between women and men to see who can have last the deep freeze.

193

00:09:21,000 --> 00:09:24,000

But before we can settle this test of the toughest,

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00:09:24,000 --> 00:09:31,000

the boys need to scratch build a rig that can serve up the pain and cater for comfort.

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00:09:31,000 --> 00:09:38,000

To make the testing more TV friendly, Adam turns a normal kitchen clock into a giant stopwatch.

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00:09:38,000 --> 00:09:42,000

Now, to operate this clock, I've rigged up a sort of electronic armrest dead man switch.

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00:09:42,000 --> 00:09:47,000

So the moment you put your hand in the ice and rest your arm on the armrest, the clock starts.

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00:09:47,000 --> 00:09:50,000

Then the second you lift your arm out, the clock stops.

199

00:09:50,000 --> 00:09:58,000

Jamie's recirculating pump should ensure the ice water stays at 1°C for as long as the testing takes.

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00:09:58,000 --> 00:10:01,000

The chill chair is ready for action.

201

00:10:01,000 --> 00:10:02,000

I like it.

202

00:10:03,000 --> 00:10:10,000

Upstairs, 25 men and 25 women have no idea what they're in for.

203

00:10:17,000 --> 00:10:22,000

Next up is the accidental rocket that could ruin your next barbecue.

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00:10:22,000 --> 00:10:23,000

So you're looking excited. What's up?

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00:10:23,000 --> 00:10:27,000

It's our myth. It's a good one, which kind of reminds me of my childhood.

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00:10:27,000 --> 00:10:28,000

Okay, hit me.

207

00:10:28,000 --> 00:10:30,000

All right. Imagine a garage or a shed is on fire.

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00:10:30,000 --> 00:10:35,000

Inside is a barbecue with a propane tank.

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00:10:35,000 --> 00:10:40,000

It explodes and turns into a rocket launching 150 feet into the air.

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00:10:40,000 --> 00:10:43,000

Oh, I've heard of this one. It's very similar to the water heater rocket.

211

00:10:43,000 --> 00:10:45,000

The heat causes the pressure inside the tank to build.

212

00:10:45,000 --> 00:10:49,000

Then there's a catastrophic rupture and sends the tank flying up into the sky.

213

00:10:49,000 --> 00:10:51,000

Wait, wait, wait. This reminds me of your childhood?

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00:10:51,000 --> 00:10:55,000

Yeah, I'd rather not talk about it. My parents are still a little upset.

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00:10:55,000 --> 00:11:01,000

Like they said, this isn't the first time we've adapted a pressure vessel.

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00:11:02,000 --> 00:11:05,000

Or deliberately set one on fire.

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00:11:05,000 --> 00:11:09,000

Or even tried to turn a gas tank into a missile.

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00:11:10,000 --> 00:11:16,000

But if this myth is true, catastrophe could be brewing in your own backyard.

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00:11:16,000 --> 00:11:20,000

The story goes that a propane tank once became a rocket.

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00:11:20,000 --> 00:11:24,000

At its perfect trajectory, it 150 feet.

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00:11:24,000 --> 00:11:26,000

Look, I gotta say, I got my doubts about this.

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00:11:26,000 --> 00:11:27,000

How so?

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00:11:27,000 --> 00:11:32,000

Propane tanks, just like all of the pressurized vessels, have a pressure relief valve built in.

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00:11:32,000 --> 00:11:37,000

When the pressure gets too high, they simply vent off the excess, thereby averting a catastrophic failure.

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00:11:37,000 --> 00:11:42,000

Yeah, but what if the fire is so intense that the pressure is building faster inside the tank

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00:11:42,000 --> 00:11:44,000

than the relief valve can dump out?

227

00:11:44,000 --> 00:11:46,000

I suppose it's possible.

228

00:11:46,000 --> 00:11:48,000

But it needs bomb range.

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00:11:48,000 --> 00:11:52,000

Now, for this myth, we need a burning garage with a propane tank inside of it.

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00:11:52,000 --> 00:11:56,000

Now, since no one's gonna let us burn down a garage, we need to build our own.

231

00:11:56,000 --> 00:12:00,000

We don't have time to build a full-size one, so we're gonna make a miniature one.

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00:12:00,000 --> 00:12:02,000

But we're still gonna build it up to code.

233

00:12:02,000 --> 00:12:04,000

It's gonna have studs every 16 inches.

234

00:12:04,000 --> 00:12:06,000

It's gonna have three walls, a driveway, and a roof.

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00:12:06,000 --> 00:12:13,000

Now, that should be plenty of material to burn in order to get this garage hot enough to turn this propane tank into a rocket.

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00:12:13,000 --> 00:12:18,000

Here on the show, we like to say that every day's a good day for an explosion,

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00:12:18,000 --> 00:12:21,000

but some days are definitely better than others.

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00:12:21,000 --> 00:12:25,000

I thought the dangerous part was gonna be the exploding propane tanks.

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00:12:25,000 --> 00:12:26,000

You all right?

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00:12:26,000 --> 00:12:27,000

Oh, no.

241

00:12:27,000 --> 00:12:34,000

It's hardly a firm foundation, but the guys know that today, the joys of shed ownership will be fleeting.

242

00:12:34,000 --> 00:12:35,000

Woo!

243

00:12:35,000 --> 00:12:40,000

They're now ready to install the stunt barbecue and the star of the show.

244

00:12:40,000 --> 00:12:45,000

Hey, don't forget the propane came straight from my garage.

245

00:12:46,000 --> 00:12:49,000

But there's still some fuel to add to the fire.

246

00:12:49,000 --> 00:12:53,000

So this kind of looks like a lot of firewood, right?

247

00:12:53,000 --> 00:12:59,000

Well, it is, because what we want is for this fire to burn long and hot.

248

00:12:59,000 --> 00:13:07,000

So they stack the shed with wood and charcoal, two common commodities that should catch fire and raise the temperature.

249

00:13:07,000 --> 00:13:12,000

Now, this fire is gonna get so hot that there is a good chance that this tank is gonna explode.

250

00:13:12,000 --> 00:13:20,000

But we want a rocket, and if the relief valve does its job, this could turn out to be nothing more than a backyard bonfire.

251

00:13:20,000 --> 00:13:25,000

Then again, one of the great things about Mythbusters is that we're so off and wrong.

252

00:13:26,000 --> 00:13:33,000

After a liberal splash of gasoline, the team shows its flair for setting a fire.

253

00:13:33,000 --> 00:13:34,000

Alright, you guys ready?

254

00:13:34,000 --> 00:13:35,000

Ready.

255

00:13:35,000 --> 00:13:39,000

Let's torch this thing in three, two, one.

256

00:13:44,000 --> 00:13:49,000

Each passing second feels like 10 as they high-tail it back to the bunker.

257

00:13:49,000 --> 00:13:51,000

Oh, that thing is going up.

258

00:13:51,000 --> 00:13:52,000

Oh, my God.

259

00:13:55,000 --> 00:13:56,000

Okay.

260

00:14:02,000 --> 00:14:06,000

By the time they arrive, the shed's an inferno.

261

00:14:06,000 --> 00:14:09,000

Okay, the flare cam says 302 degrees.

262

00:14:09,000 --> 00:14:10,000

Look at that.

263

00:14:10,000 --> 00:14:11,000

It's just all white.

264

00:14:11,000 --> 00:14:19,000

Then, with the temperature passing 800 degrees, the safety valve finally kicks in, doing exactly what it's supposed to do.

265

00:14:19,000 --> 00:14:21,000

There it goes.

266

00:14:21,000 --> 00:14:23,000

The relief valve just broke.

267

00:14:23,000 --> 00:14:24,000

Look at that.

268

00:14:24,000 --> 00:14:25,000

It's like a flamethrower.

269

00:14:25,000 --> 00:14:30,000

So there she blows, and the cylinder didn't move an inch.

270

00:14:30,000 --> 00:14:35,000

The valve released the gas pressure faster, and the tank could build it up.

271

00:14:35,000 --> 00:14:38,000

The important thing is that the tank did not rupture.

272

00:14:38,000 --> 00:14:45,000

There was no explosion, and we saw a jet of fire, but no thrust, which would make a rocket.

273

00:14:45,000 --> 00:14:50,000

So the shed bites the dust, but there's room for improvement.

274

00:14:50,000 --> 00:14:53,000

So this myth is not confirmed under normal circumstances.

275

00:14:53,000 --> 00:14:56,000

It looks like we're going to have to disable the pressure relief valve to get any sort of result.

276

00:14:56,000 --> 00:15:01,000

Maybe we need to go back to the shop, change the circumstances to get one of these tanks to act more like a rocket.

277

00:15:01,000 --> 00:15:03,000

All right.

278

00:15:05,000 --> 00:15:09,000

Coming up, Adam and Jamie finally settle the biggest gender myth of all.

279

00:15:09,000 --> 00:15:13,000

Can women really take more pain than men?

280

00:15:13,000 --> 00:15:14,000

It hurts, doesn't it?

281

00:15:14,000 --> 00:15:15,000

Yes, it does.

282

00:15:21,000 --> 00:15:24,000

This myth is called no pain, no gain.

283

00:15:24,000 --> 00:15:28,000

Though I must admit, it's often hard to see an upside.

284

00:15:28,000 --> 00:15:36,000

Adam and Jamie have settled on their torment of choice, which is sticking your arm in an ice bath to see who lasts the longest.

285

00:15:36,000 --> 00:15:41,000

And the very first contest is men versus women.

286

00:15:41,000 --> 00:15:44,000

The volunteers have all been declared fit and healthy.

287

00:15:44,000 --> 00:15:48,000

None of them know there's a three-minute cap on the ice dunk.

288

00:15:48,000 --> 00:15:51,000

In fact, they don't even know why they're here.

289

00:15:51,000 --> 00:15:57,000

And now it's time for women versus men, specifically the myth that women have a higher tolerance for pain than men.

290

00:15:57,000 --> 00:15:58,000

Why is this interesting?

291

00:15:58,000 --> 00:16:02,000

Well, in our society, men are viewed as strong and women are viewed as weak.

292

00:16:02,000 --> 00:16:05,000

And wouldn't it be lovely if the reverse were true?

293

00:16:05,000 --> 00:16:06,000

It sure would.

294

00:16:06,000 --> 00:16:08,000

And we're about to find out.

295

00:16:08,000 --> 00:16:14,000

Yes, so you keep your hand, your fingers apart so that they get as cold as possible.

296

00:16:14,000 --> 00:16:15,000

Okay.

297

00:16:15,000 --> 00:16:17,000

And hold your hand still in the bucket.

298

00:16:17,000 --> 00:16:18,000

You don't have to do this.

299

00:16:18,000 --> 00:16:19,000

Are you okay with it?

300

00:16:19,000 --> 00:16:20,000

I'm fine.

301

00:16:20,000 --> 00:16:21,000

Okay.

302

00:16:21,000 --> 00:16:23,000

Melissa commits.

303

00:16:23,000 --> 00:16:27,000

Other than that, the instructions are much like the guys got at Stanford.

304

00:16:27,000 --> 00:16:31,000

Sing out when it hurts and pull out when it's all too much.

305

00:16:31,000 --> 00:16:33,000

That's pain.

306

00:16:33,000 --> 00:16:34,000

Okay.

307

00:16:34,000 --> 00:16:35,000

You got it?

308

00:16:35,000 --> 00:16:37,000

I got it.

309

00:16:37,000 --> 00:16:44,000

As the seconds tick by, Melissa proves more than a match for the arm-numbing pain.

310

00:16:44,000 --> 00:16:45,000

And you're done.

311

00:16:45,000 --> 00:16:46,000

You're done.

312

00:16:46,000 --> 00:16:48,000

We have a three-minute safety cutoff.

313

00:16:48,000 --> 00:16:49,000

Excellent.

314

00:16:49,000 --> 00:16:50,000

You did amazing.

315

00:16:50,000 --> 00:16:51,000

Oh, my gosh.

316

00:16:51,000 --> 00:16:52,000

Thank you.

317

00:16:52,000 --> 00:16:56,000

That's a positive start for girls versus guys.

318

00:16:56,000 --> 00:17:00,000

But the following females fall way short of that magic mark.

319

00:17:00,000 --> 00:17:03,000

Now be sure to tell us whenever you start to feel pain.

320

00:17:03,000 --> 00:17:05,000

All right, it's starting to hurt.

321

00:17:05,000 --> 00:17:06,000

Okay.

322

00:17:06,000 --> 00:17:09,000

The next four contestants are much more like Adam.

323

00:17:09,000 --> 00:17:12,000

They all last less than a minute.

324

00:17:12,000 --> 00:17:18,000

While Adam crunches the numbers, our paramedic Sanjay is on hand to check their vitals.

325

00:17:18,000 --> 00:17:21,000

You feeling dizzy, lightheaded, anything like that?

326

00:17:21,000 --> 00:17:22,000

Any chest pain?

327

00:17:22,000 --> 00:17:23,000

Sort of spread?

328

00:17:23,000 --> 00:17:24,000

Okay.

329

00:17:24,000 --> 00:17:26,000

Continue drying your hand and come with me into the sun.

330

00:17:26,000 --> 00:17:27,000

All right.

331

00:17:27,000 --> 00:17:31,000

But how can a simple tub of cold water cause so much discomfort?

332

00:17:31,000 --> 00:17:33,000

So how does ice water cause pain?

333

00:17:33,000 --> 00:17:38,000

Well, you have special receptors in your skin called nociceptors, and these are specifically

334

00:17:38,000 --> 00:17:39,000

to sense temperature.

335

00:17:39,000 --> 00:17:44,000

So when your skin temperature gets low enough, these send a signal to your spinal cord and

336

00:17:44,000 --> 00:17:47,000

then to your brain, and this is what you interpret as pain.

337

00:17:47,000 --> 00:17:53,000

Now the goal here is to get you to remove your hand before you receive any actual damage.

338

00:17:53,000 --> 00:17:59,000

So the tolerance testing begins for the men, and just like the women, they have no idea

339

00:17:59,000 --> 00:18:01,000

that this is a battle of the sexes.

340

00:18:01,000 --> 00:18:02,000

Go ahead.

341

00:18:02,000 --> 00:18:03,000

All right.

342

00:18:03,000 --> 00:18:05,000

Keep your fingers spread.

343

00:18:05,000 --> 00:18:06,000

There we go.

344

00:18:06,000 --> 00:18:09,000

And tell us when you first experience pain.

345

00:18:09,000 --> 00:18:12,000

For the record, that takes just 15 seconds.

346

00:18:12,000 --> 00:18:14,000

Okay, I got some pain now.

347

00:18:14,000 --> 00:18:15,000

Okay.

348

00:18:15,000 --> 00:18:22,000

Half a minute later, Thomas, who looks as tough as teak, has had enough.

349

00:18:22,000 --> 00:18:24,000

All right then.

350

00:18:24,000 --> 00:18:25,000

It hurts, doesn't it?

351

00:18:25,000 --> 00:18:26,000

Yes, it does.

352

00:18:26,000 --> 00:18:27,000

Okay.

353

00:18:27,000 --> 00:18:33,000

In the next 60 minutes, many more men take the one degree plunge into pain.

354

00:18:33,000 --> 00:18:34,000

Okay.

355

00:18:34,000 --> 00:18:35,000

Excellent.

356

00:18:35,000 --> 00:18:36,000

Excellent.

357

00:18:36,000 --> 00:18:39,000

And some do beat the clock.

358

00:18:39,000 --> 00:18:40,000

And that's it.

359

00:18:40,000 --> 00:18:41,000

That's three minutes.

360

00:18:41,000 --> 00:18:42,000

All right.

361

00:18:42,000 --> 00:18:46,000

Tell by the ice that's stuck to your forearm.

362

00:18:46,000 --> 00:18:48,000

Okay.

363

00:18:48,000 --> 00:18:52,000

While others just seem doomed from the start.

364

00:18:52,000 --> 00:18:53,000

Okay.

365

00:18:53,000 --> 00:18:54,000

Excellent.

366

00:18:54,000 --> 00:18:55,000

Nicely done.

367

00:18:55,000 --> 00:18:59,000

Watch your step coming off here.

368

00:18:59,000 --> 00:19:01,000

Steven succumbs to unbearable pain.

369

00:19:01,000 --> 00:19:03,000

Sanjeev, I'll take it from here.

370

00:19:03,000 --> 00:19:04,000

Okay, thank you.

371

00:19:04,000 --> 00:19:05,000

Steven, thank you.

372

00:19:05,000 --> 00:19:06,000

Thank you.

373

00:19:06,000 --> 00:19:10,000

Thanks to all those who've rolled up their sleeves for popular science.

374

00:19:10,000 --> 00:19:14,000

Adam's done the arithmetic, so we won't keep you waiting on men versus women.

375

00:19:14,000 --> 00:19:20,000

The final figures are the average number of seconds they lasted.

376

00:19:20,000 --> 00:19:21,000

Ta-da!

377

00:19:21,000 --> 00:19:23,000

We have crunched the numbers from all our test subjects.

378

00:19:23,000 --> 00:19:25,000

Would you like to know the result?

379

00:19:25,000 --> 00:19:26,000

Yes.

380

00:19:26,000 --> 00:19:27,000

Okay, here it comes.

381

00:19:27,000 --> 00:19:30,000

The result is myth confirmed.

382

00:19:30,000 --> 00:19:35,000

Women did, in fact, have a reasonably higher tolerance for pain than men in our study.

383

00:19:35,000 --> 00:19:36,000

I'll be darned.

384

00:19:36,000 --> 00:19:37,000

Ha!

385

00:19:37,000 --> 00:19:39,000

In your face, man!

386

00:19:39,000 --> 00:19:40,000

Oh.

387

00:19:40,000 --> 00:19:47,000

Up next, hopes are sky-high for a real backyard rocket.

388

00:19:47,000 --> 00:19:49,000

Does it look like it's getting rounder?

389

00:19:49,000 --> 00:19:51,000

Oh!

390

00:19:51,000 --> 00:20:01,000

Tori, Grant and Kerry are testing the myth that a super-heated propane tank could rupture

391

00:20:01,000 --> 00:20:06,000

and take off like a rocket, 150 feet in the air.

392

00:20:06,000 --> 00:20:09,000

So far, all they've done is burn down a shed.

393

00:20:09,000 --> 00:20:15,000

Now, it's time to disable that pesky safety relief valve from an empty tank.

394

00:20:15,000 --> 00:20:20,000

So, these propane tanks have a lot of safety features built in, and they don't want you

395

00:20:20,000 --> 00:20:23,000

to be able to go in and defeat them.

396

00:20:23,000 --> 00:20:30,000

So, us professional YAHOOs have to grind our own tools, because this is a non-standard goal.

397

00:20:30,000 --> 00:20:36,000

So, we take this perfectly good wrench and make it into a custom removal tool.

398

00:20:36,000 --> 00:20:43,000

And that's as much as we're going to show or explain, because trying this yourself is a really bad idea.

399

00:20:43,000 --> 00:20:51,000

Suffice it to say that before long, Grant's removed the device and plugged the hole to simulate an old tank with a busted valve.

400

00:20:51,000 --> 00:20:59,000

Gotta say, with this safety valve disabled, I see big boom in our future.

401

00:20:59,000 --> 00:21:05,000

Back on the range, Tori reveals the other major modification in Plan B.

402

00:21:05,000 --> 00:21:12,000

Instead of burning a shed, they'll heat their blocked-up tank with a portable propane gas range.

403

00:21:12,000 --> 00:21:17,000

So, we're setting up a burner, attaching a 20-foot hard line to that,

404

00:21:17,000 --> 00:21:22,000

then to that we're going to attach a 200-foot line down the bomb range to our feed tank.

405

00:21:22,000 --> 00:21:30,000

Now, just so we're all crystal clear, this feed tank pumps propane direct to the burner, so the flames stay lit.

406

00:21:30,000 --> 00:21:34,000

It's in no way hooked up to our canister rocket.

407

00:21:34,000 --> 00:21:39,000

A pressure release valve, which we've dismantled from this particular tank, is there to prevent a key disaster.

408

00:21:39,000 --> 00:21:44,000

It's called a blevi. Now, that's an acronym for Boiling Liquid Expanding Vapor Explosion,

409

00:21:44,000 --> 00:21:51,000

a vessel that has a pressurized liquid inside. When it ruptures, it can have a catastrophic explosion.

410

00:21:51,000 --> 00:21:56,000

They should get their blevi, but Grant doubts he'll witness the launch of a missile.

411

00:21:56,000 --> 00:22:03,000

The problem is we don't know where it's going to rupture. I think it's going to rupture probably on this seam and go, wham!

412

00:22:03,000 --> 00:22:05,000

I still don't think it's going to be a rocket.

413

00:22:05,000 --> 00:22:09,000

To find out if he's right, Tori lights up the stovetop.

414

00:22:09,000 --> 00:22:10,000

Here we go.

415

00:22:10,000 --> 00:22:12,000

While Grant pumps the gas.

416

00:22:19,000 --> 00:22:20,000

This could be big.

417

00:22:20,000 --> 00:22:21,000

It could be really big.

418

00:22:21,000 --> 00:22:22,000

It's going to be a huge fireball.

419

00:22:22,000 --> 00:22:25,000

Or a really awesome rocket.

420

00:22:25,000 --> 00:22:27,000

Look at the bottom, it's blackening.

421

00:22:27,000 --> 00:22:31,000

And you can see the blurry heat fog right above it.

422

00:22:32,000 --> 00:22:36,000

Ten minutes in, this modified tank looks like it's ready to burst.

423

00:22:36,000 --> 00:22:40,000

It's the tank? Does it look like it's getting rounder?

424

00:22:40,000 --> 00:22:41,000

It does.

425

00:22:41,000 --> 00:22:42,000

Yeah, it does, right?

426

00:22:47,000 --> 00:22:54,000

Well, it wasn't necessarily a rocket, because pieces went that way, that way, that way, that way, that way, that way, that way, that way.

427

00:22:54,000 --> 00:22:58,000

In fact, they went every which way but vertical.

428

00:22:59,000 --> 00:23:01,000

There's a piece right there!

429

00:23:01,000 --> 00:23:04,000

That was on the way!

430

00:23:04,000 --> 00:23:06,000

Glad you're in the bunker, huh?

431

00:23:06,000 --> 00:23:08,000

Wow, crap.

432

00:23:08,000 --> 00:23:12,000

The actual blast was so strong, it blew out the flame from the burner.

433

00:23:12,000 --> 00:23:20,000

Some of the shards flew 300 feet sideways, but stray bits of metal do not make a rocket.

434

00:23:20,000 --> 00:23:24,000

So this is what's left of our tank, and it's pretty much what I expected to happen.

435

00:23:24,000 --> 00:23:27,000

They rupture, however, they rupture in random spots.

436

00:23:27,000 --> 00:23:35,000

We definitely achieved a blevy. Our tank ruptured and lost all of its energy all at once, rather than any sort of nozzle-like activity.

437

00:23:35,000 --> 00:23:42,000

What we want is a tiny hole punched through the base to release all the force of the pressurized gas.

438

00:23:42,000 --> 00:23:49,000

And if a tank was part-rusted in just the right spot, there's a good chance we'd get our rocket.

439

00:23:49,000 --> 00:23:52,000

Oh, I think we could definitely do that. Let's go try it.

440

00:23:52,000 --> 00:23:53,000

Alright.

441

00:23:54,000 --> 00:23:59,000

So we're back in the shot. Now before we start weakening these tanks as if they were rusty or old tanks,

442

00:23:59,000 --> 00:24:01,000

I need to find out exactly what I'm up against.

443

00:24:01,000 --> 00:24:05,000

So what I'm going to do is cut one of these in half just to find out how thick the wall is.

444

00:24:05,000 --> 00:24:10,000

Because we want to cut halfway through the thickness of the wall, not all the way through in puncture.

445

00:24:10,000 --> 00:24:18,000

Ever so carefully, Torey splits the empty tank in two, then pulls out the calipers.

446

00:24:19,000 --> 00:24:25,000

Knowing that the base of this tank is .083 inches thick, this is where we want to weaken the tank,

447

00:24:25,000 --> 00:24:32,000

so that this fails before the rest of the tank ruptures and hopefully creates a nozzle through which we get thrust.

448

00:24:33,000 --> 00:24:37,000

So Grant sets the drill to just half that depth,

449

00:24:37,000 --> 00:24:43,000

boring a divot to approximate a neglected tank that's part-rusted through.

450

00:24:43,000 --> 00:24:45,000

Now it's on to make a rocket.

451

00:24:48,000 --> 00:24:49,000

Alright.

452

00:24:50,000 --> 00:24:53,000

Out on the bomb range, well, at least it's not raining.

453

00:24:54,000 --> 00:24:55,000

Oh dear.

454

00:24:58,000 --> 00:25:00,000

If this was NASA, they'd call off the launch.

455

00:25:00,000 --> 00:25:04,000

But perseverance pays off as the fog soon lifts,

456

00:25:04,000 --> 00:25:07,000

and hopes are high for a genuine lift off.

457

00:25:07,000 --> 00:25:09,000

This should be fun.

458

00:25:10,000 --> 00:25:15,000

For this myth to be confirmed, we're actually going to have to propel that tank 150 feet in the air.

459

00:25:15,000 --> 00:25:19,000

That's a five gallon tank. That is going to take so much thrust.

460

00:25:23,000 --> 00:25:24,000

That's a lot of thrust.

461

00:25:25,000 --> 00:25:31,000

Once again, they'll heat the tank with a propane burner, and the pressure relief valve is blocked off.

462

00:25:31,000 --> 00:25:32,000

Is it good yet?

463

00:25:32,000 --> 00:25:36,000

This will be the ultimate test of a compromise container.

464

00:25:36,000 --> 00:25:41,000

Now we're ready to see if a five gallon barbecue gas tank can really take flight.

465

00:25:41,000 --> 00:25:43,000

Okay, ready to start.

466

00:25:43,000 --> 00:25:45,000

Alright, turn it on.

467

00:25:46,000 --> 00:25:47,000

Good.

468

00:25:55,000 --> 00:25:57,000

Let's see if we get a rocket.

469

00:26:00,000 --> 00:26:02,000

I think it's going to work this time.

470

00:26:02,000 --> 00:26:04,000

I'm feeling really good about this experiment.

471

00:26:04,000 --> 00:26:09,000

I feel confident that weakening right on the bottom, it's in the perfect place to form a rocket nozzle.

472

00:26:09,000 --> 00:26:11,000

Whatever happens, it's going to be spectacular.

473

00:26:11,000 --> 00:26:13,000

But it's clear that they'll have to be patient.

474

00:26:13,000 --> 00:26:17,000

After almost four minutes, the tank isn't bulging like the last time.

475

00:26:18,000 --> 00:26:19,000

Then...

476

00:26:23,000 --> 00:26:24,000

I don't think that was a rocket.

477

00:26:24,000 --> 00:26:27,000

That was absolutely not a rocket. It just blew up.

478

00:26:27,000 --> 00:26:30,000

Once again, the blast extinguished the burner.

479

00:26:30,000 --> 00:26:36,000

It's a splatter spectacular, but the myth remains vertically challenged.

480

00:26:36,000 --> 00:26:42,000

We got a rupture that started from the bottom, it peeled apart the tank, threw it in many different directions,

481

00:26:42,000 --> 00:26:45,000

but nothing looked like a rocket.

482

00:26:46,000 --> 00:26:52,000

It's another disastrous failure to launch, but the bit that burst first went exactly the plan.

483

00:26:52,000 --> 00:26:54,000

And did you notice where it ruptured?

484

00:26:54,000 --> 00:26:56,000

I mean exactly where we weakened the tank.

485

00:26:56,000 --> 00:27:02,000

Still not a rocket, but you know, before we give up on the scenario, we used a full tank here.

486

00:27:02,000 --> 00:27:05,000

What if the tank in the garage was almost empty?

487

00:27:05,000 --> 00:27:07,000

Another explosion? Okay, I'm in.

488

00:27:08,000 --> 00:27:14,000

Grant's theory that less is more might well be the key to unleashing the power of propane.

489

00:27:14,000 --> 00:27:17,000

And who can say no to another explosion?

490

00:27:22,000 --> 00:27:27,000

Straight ahead, Adam's red-headed peeps are put to the ultimate pain test.

491

00:27:27,000 --> 00:27:28,000

I hate cold.

492

00:27:28,000 --> 00:27:30,000

Ha ha ha, oh good.

493

00:27:36,000 --> 00:27:45,000

So far, Cary, Grant and Tory have totally failed to confirm the myth that a barbecue propane tank could fly like a rocket.

494

00:27:45,000 --> 00:27:47,000

They've blocked off the relief valve.

495

00:27:47,000 --> 00:27:49,000

This is wet, that way, that way.

496

00:27:49,000 --> 00:27:52,000

Then drilled out the bottom to simulate a rusty tank.

497

00:27:52,000 --> 00:27:54,000

I don't think that was a rocket.

498

00:27:54,000 --> 00:27:59,000

But Grant thinks the key to success is to stop way short of filling the tank.

499

00:27:59,000 --> 00:28:03,000

Now nearly empty propane tank might be the key to creating a rocket.

500

00:28:03,000 --> 00:28:05,000

Let me illustrate with this water bottle.

501

00:28:05,000 --> 00:28:08,000

Now the water in here represents the liquid propane.

502

00:28:08,000 --> 00:28:10,000

It's incompressible.

503

00:28:10,000 --> 00:28:13,000

There's no room for the gas to expand and build up pressure.

504

00:28:13,000 --> 00:28:17,000

But if we remove most of that liquid,

505

00:28:19,000 --> 00:28:23,000

now we have all of this volume for the gas to expand and build up pressure.

506

00:28:23,000 --> 00:28:26,000

And that might be what turns this into a rocket.

507

00:28:26,000 --> 00:28:31,000

I'm having a hard time believing that this is going to happen after the last few tests.

508

00:28:31,000 --> 00:28:35,000

But since we are changing the circumstances just slightly,

509

00:28:35,000 --> 00:28:39,000

putting less propane in, we might have a different conclusion.

510

00:28:39,000 --> 00:28:43,000

This time, Cary does the cooking and the running.

511

00:28:47,000 --> 00:28:51,000

No one knows just what's going to happen or when.

512

00:28:51,000 --> 00:28:53,000

It's starting to look like it's swelling a little bit.

513

00:28:53,000 --> 00:28:55,000

Well, it's turned almost completely black.

514

00:28:55,000 --> 00:28:57,000

That's when it exploded last time.

515

00:28:57,000 --> 00:28:59,000

Propane rocket.

516

00:28:59,000 --> 00:29:01,000

Here we go.

517

00:29:01,000 --> 00:29:03,000

And sooner than Tori expected...

518

00:29:07,000 --> 00:29:09,000

We got a rocket!

519

00:29:09,000 --> 00:29:11,000

Wait, wait, wait, wait, wait, wait, wait.

520

00:29:11,000 --> 00:29:14,000

That was not 150 feet in the air.

521

00:29:14,000 --> 00:29:16,000

And it didn't go straight up.

522

00:29:16,000 --> 00:29:21,000

Alright, but you have to admit, that is the best thing we've seen so far.

523

00:29:21,000 --> 00:29:27,000

In fact, it's the first tank they've seen that shot up like a missile and stayed intact.

524

00:29:27,000 --> 00:29:29,000

We're all incredibly excited right now.

525

00:29:29,000 --> 00:29:32,000

I mean, we actually created something that looked like a rocket.

526

00:29:32,000 --> 00:29:36,000

A 60 foot launch is not the 150 they wanted,

527

00:29:36,000 --> 00:29:40,000

but it's promising and totally spectacular.

528

00:29:40,000 --> 00:29:42,000

You'd be a brave man to call this one busted.

529

00:29:42,000 --> 00:29:44,000

It's totally plausible.

530

00:29:44,000 --> 00:29:47,000

It didn't make it to 150 feet, but it did look like a rocket.

531

00:29:47,000 --> 00:29:49,000

Yeah, this is like a lot of our myths.

532

00:29:49,000 --> 00:29:52,000

I mean, we have a bizarre set of circumstances that gives us a totally wild outcome.

533

00:29:52,000 --> 00:29:54,000

But we didn't get that 150 feet.

534

00:29:54,000 --> 00:29:57,000

I mean, what can we do to make that go 150 feet?

535

00:29:57,000 --> 00:29:59,000

Oh.

536

00:30:00,000 --> 00:30:03,000

Laughter like that can only mean one thing.

537

00:30:03,000 --> 00:30:07,000

They will do whatever it takes to match the myth.

538

00:30:24,000 --> 00:30:26,000

You've pondered this yourself.

539

00:30:26,000 --> 00:30:29,000

Can some of us tolerate more pain than others?

540

00:30:29,000 --> 00:30:31,000

Shoo!

541

00:30:31,000 --> 00:30:33,000

Shoo!

542

00:30:33,000 --> 00:30:37,000

So far, it's hardly been a case of dam zills in distress.

543

00:30:37,000 --> 00:30:41,000

The testing shows women are clearly more stoic than men.

544

00:30:41,000 --> 00:30:42,000

What's next, Adam?

545

00:30:42,000 --> 00:30:44,000

Next is a myth that I take a little personally,

546

00:30:44,000 --> 00:30:50,000

and it is that redheads supposedly have a lower tolerance for pain than regular people.

547

00:30:50,000 --> 00:30:53,000

So once again, you get to experience pain for science, huh?

548

00:30:53,000 --> 00:30:55,000

No, no, no.

549

00:30:55,000 --> 00:30:58,000

I did my duty walking on hot coals, man.

550

00:30:58,000 --> 00:31:01,000

I remember it like it was yesterday.

551

00:31:01,000 --> 00:31:05,000

This was the time when the whole team walked the walk on hot coals,

552

00:31:05,000 --> 00:31:10,000

and the only one to suffer was our resident redhead.

553

00:31:10,000 --> 00:31:14,000

The rules are exactly the same as for men versus women,

554

00:31:14,000 --> 00:31:17,000

and it already seems there's some truth to the rumor.

555

00:31:17,000 --> 00:31:18,000

I hate cold.

556

00:31:18,000 --> 00:31:20,000

Oh, good.

557

00:31:20,000 --> 00:31:25,000

There we go. Perfect.

558

00:31:25,000 --> 00:31:28,000

I've heard that redheads have a lower tolerance of pain,

559

00:31:28,000 --> 00:31:33,000

but I don't actually know a large enough sample group to confirm or deny that,

560

00:31:33,000 --> 00:31:35,000

so we'll see what happens today.

561

00:31:35,000 --> 00:31:36,000

We sure will.

562

00:31:36,000 --> 00:31:37,000

Done.

563

00:31:37,000 --> 00:31:39,000

Excellent.

564

00:31:39,000 --> 00:31:41,000

As two dozen more women...

565

00:31:41,000 --> 00:31:43,000

It's ridiculous the cold.

566

00:31:43,000 --> 00:31:44,000

Isn't it?

567

00:31:44,000 --> 00:31:46,000

And men, whenever you're ready.

568

00:31:46,000 --> 00:31:47,000

All right.

569

00:31:47,000 --> 00:31:50,000

Wave the flag for the redheaded regiment.

570

00:31:50,000 --> 00:31:51,000

Perfect.

571

00:31:51,000 --> 00:31:52,000

I think it is a myth.

572

00:31:52,000 --> 00:31:55,000

I think we may feel it faster than other people.

573

00:31:55,000 --> 00:31:57,000

And now it's starting to hurt.

574

00:31:57,000 --> 00:32:00,000

But I think we can stand it just as well, if not better.

575

00:32:00,000 --> 00:32:02,000

And you made it to three minutes.

576

00:32:02,000 --> 00:32:04,000

Out you come.

577

00:32:04,000 --> 00:32:09,000

Brian's the first of a small batch to challenge the myth that the redheads can't take it.

578

00:32:09,000 --> 00:32:10,000

You made it three minutes.

579

00:32:10,000 --> 00:32:11,000

Done.

580

00:32:11,000 --> 00:32:13,000

And pull your hand out.

581

00:32:13,000 --> 00:32:15,000

Excellent work.

582

00:32:15,000 --> 00:32:21,000

They last long enough to make busting this part of the myth a real possibility.

583

00:32:21,000 --> 00:32:24,000

All right, Jamie, it's time for the one I know that you've been waiting for.

584

00:32:24,000 --> 00:32:27,000

Redheads versus non-redheads.

585

00:32:27,000 --> 00:32:29,000

We crunch the numbers.

586

00:32:29,000 --> 00:32:30,000

Do you want to know the result?

587

00:32:30,000 --> 00:32:31,000

Yes.

588

00:32:31,000 --> 00:32:32,000

Okay, here they come.

589

00:32:32,000 --> 00:32:38,000

The myth that redheads have a lower tolerance for pain is busted hugely.

590

00:32:38,000 --> 00:32:39,000

Look at the redheads.

591

00:32:39,000 --> 00:32:43,000

They kicked the butt of everybody else we've tested.

592

00:32:43,000 --> 00:32:44,000

Well, those are your peeps.

593

00:32:44,000 --> 00:32:45,000

Are you proud?

594

00:32:45,000 --> 00:32:47,000

I am proud to be one of them.

595

00:32:47,000 --> 00:32:48,000

Yes.

596

00:32:50,000 --> 00:32:54,000

Still to come, things are looking up for the propane rocket.

597

00:32:54,000 --> 00:32:57,000

Three, two, one.

598

00:32:57,000 --> 00:33:01,000

And can serious cousin give sweet relief?

599

00:33:08,000 --> 00:33:12,000

The last launch of the propane gas tank looked close to perfection.

600

00:33:12,000 --> 00:33:17,000

They just couldn't manage the mythical 150 feet.

601

00:33:17,000 --> 00:33:19,000

So here's the plan.

602

00:33:19,000 --> 00:33:24,000

To replicate the results of the myth, Tori builds a 10-foot rocket launcher.

603

00:33:24,000 --> 00:33:30,000

He's also come up with a sure-fire way to punch out the perfect nozzle.

604

00:33:30,000 --> 00:33:32,000

I got a 9-millimeter pistol.

605

00:33:32,000 --> 00:33:36,000

It's in a ransom rest, and it's pointed at the base of our tank.

606

00:33:36,000 --> 00:33:40,000

Now, that ransom rest is connected to a window motor.

607

00:33:40,000 --> 00:33:43,000

All they need to do is run that motor.

608

00:33:43,000 --> 00:33:47,000

It'll pull the ransom rest lever and fire the gun.

609

00:33:47,000 --> 00:33:50,000

That's a whole new way to shoot a rocket.

610

00:33:50,000 --> 00:33:56,000

Back at the range for the very last time, Tori's rig is deployed in a matter of minutes.

611

00:33:56,000 --> 00:33:59,000

But the force of the bullet remains a concern.

612

00:33:59,000 --> 00:34:05,000

If we shoot all the way through making two holes, all of that pressure is going to vent out of the second hole.

613

00:34:05,000 --> 00:34:12,000

So, we selected a small enough caliber handgun to shoot in, but it doesn't come out.

614

00:34:12,000 --> 00:34:14,000

Let's hope they've guessed right.

615

00:34:14,000 --> 00:34:19,000

Now, we've taken everything we've learned from our previous tests and applied it to this last one

616

00:34:19,000 --> 00:34:21,000

in order to replicate the results of the myth.

617

00:34:21,000 --> 00:34:27,000

We got one tank to go to 60 feet, but we want our next one to go to 150 feet.

618

00:34:27,000 --> 00:34:31,000

The flares are set to light the flame once Grant turns on the gas.

619

00:34:31,000 --> 00:34:38,000

And the gun, safely mounted below the burners, will eventually be fired remotely by Tori.

620

00:34:38,000 --> 00:34:42,000

It's my favorite part, replicating the results.

621

00:34:42,000 --> 00:34:45,000

All right, the gun's on! The gun's on!

622

00:34:45,000 --> 00:34:47,000

We're on our way!

623

00:34:47,000 --> 00:34:50,000

We have the best jobs ever!

624

00:34:50,000 --> 00:34:52,000

Yeah!

625

00:34:53,000 --> 00:34:59,000

As the flames start licking the steel, they figure they've got around about an eight-minute wait.

626

00:34:59,000 --> 00:35:03,000

Whenever we have to wait for something to explode, it seems like time goes really, really slow.

627

00:35:03,000 --> 00:35:09,000

I know, right? And hopefully that bullet's only going to go through the bottom and give us a nozzle.

628

00:35:09,000 --> 00:35:15,000

So the watch continues for those telltale signs of imminent tank failure.

629

00:35:15,000 --> 00:35:18,000

You know what? I think it's round, dude.

630

00:35:18,000 --> 00:35:23,000

If they wait any longer, the tank might explode, so it's now or never.

631

00:35:23,000 --> 00:35:27,000

Firing the gun should breach the bottom and give them their rocket.

632

00:35:28,000 --> 00:35:31,000

In three, two, one...

633

00:35:36,000 --> 00:35:38,000

Oh, it's still spinning!

634

00:35:42,000 --> 00:35:48,000

Brilliant launch, and the suspense leading up to it was just a nail biter.

635

00:35:49,000 --> 00:35:56,000

With a perfect nine-millimeter nozzle and a launch tower, this really was a proper propane rocket.

636

00:35:56,000 --> 00:36:01,000

And if the tank had fins to keep its trajectory straight and true, well, who knows?

637

00:36:01,000 --> 00:36:04,000

When you take it back to the original myth, yes, we did not get the 150 feet,

638

00:36:04,000 --> 00:36:08,000

but we got something that really looked like a rocket. I think it's still plausible.

639

00:36:08,000 --> 00:36:10,000

I agree. Plausible. Plausible.

640

00:36:10,000 --> 00:36:14,000

Under the perfect storm of conditions, I think you could get a rocket.

641

00:36:26,000 --> 00:36:32,000

Adam and Jamie have already taken one for the team, then tortured some strangers

642

00:36:32,000 --> 00:36:35,000

to find out if some folk cope better with pain.

643

00:36:37,000 --> 00:36:39,000

So what's next?

644

00:36:39,000 --> 00:36:41,000

Well, allow me to demonstrate.

645

00:36:43,000 --> 00:36:44,000

Ow!

646

00:36:44,000 --> 00:36:46,000

Question. Did swearing make that hurt less?

647

00:36:46,000 --> 00:36:48,000

I don't know!

648

00:36:48,000 --> 00:36:52,000

Well, that's our next myth. Does swearing increase your tolerance to pain?

649

00:36:52,000 --> 00:36:53,000

Ah!

650

00:36:55,000 --> 00:37:00,000

It's a fair enough question, but testing it out poses obvious problems.

651

00:37:01,000 --> 00:37:03,000

We've cursed on the show before, plenty.

652

00:37:03,000 --> 00:37:07,000

But what you may not know is that not only do they bleep the sound of our curses,

653

00:37:07,000 --> 00:37:11,000

but often if our mouth is visible during a curse, they blur it so you can't read our lips

654

00:37:11,000 --> 00:37:13,000

and see what nasty things are coming out of us.

655

00:37:13,000 --> 00:37:16,000

And every time they have to blur it, it costs a lot of money.

656

00:37:16,000 --> 00:37:19,000

So I figure I'm going to do the editors a favor for this myth

657

00:37:19,000 --> 00:37:23,000

and actually make a piece of headgear which blurs my mouth for them.

658

00:37:23,000 --> 00:37:25,000

Then all they have to do is a bleep, and bleeps are cheap.

659

00:37:25,000 --> 00:37:28,000

All right, here goes the first test.

660

00:37:30,000 --> 00:37:33,000

Initiating the curse-proof tool.

661

00:37:34,000 --> 00:37:35,000

How about this?

662

00:37:41,000 --> 00:37:43,000

No blurring for the editors!

663

00:37:44,000 --> 00:37:49,000

Given that this setup is all the same, how is this test any different than the others?

664

00:37:50,000 --> 00:37:54,000

For this test, our sample size will be 5,

665

00:37:54,000 --> 00:37:57,000

except instead of averaging our data across all 5 test subjects,

666

00:37:57,000 --> 00:38:01,000

in this test, each subject will be compared to themselves.

667

00:38:02,000 --> 00:38:06,000

In order to isolate the act of swearing from the act of speaking,

668

00:38:06,000 --> 00:38:12,000

our test subjects are going to be repeating a number of non-swear words over and over again while they're undergoing the test.

669

00:38:13,000 --> 00:38:17,000

Carri-Torian Grant are sworn in to make up the 5.

670

00:38:17,000 --> 00:38:20,000

Now this is a test in two parts.

671

00:38:20,000 --> 00:38:26,000

First, the control, where they pre-select ordinary words to scream out when it hurts.

672

00:38:26,000 --> 00:38:29,000

Okay, there are your words.

673

00:38:29,000 --> 00:38:32,000

5 non-swear words.

674

00:38:32,000 --> 00:38:34,000

First, Grant.

675

00:38:35,000 --> 00:38:37,000

And then, Carri.

676

00:38:39,000 --> 00:38:42,000

Hang on as long as they can.

677

00:38:42,000 --> 00:38:43,000

Donut.

678

00:38:43,000 --> 00:38:44,000

Fudge.

679

00:38:44,000 --> 00:38:45,000

Blueberry.

680

00:38:45,000 --> 00:38:46,000

Sugar.

681

00:38:46,000 --> 00:38:47,000

Schnitzel.

682

00:38:47,000 --> 00:38:48,000

Oh goodness.

683

00:38:48,000 --> 00:38:49,000

Piston.

684

00:38:50,000 --> 00:38:53,000

But both fall way short of the 3-minute limit.

685

00:38:53,000 --> 00:38:54,000

I think that's it.

686

00:38:54,000 --> 00:38:56,000

That's got...

687

00:38:57,000 --> 00:38:59,000

Okay, I'm getting tunnel vision.

688

00:38:59,000 --> 00:39:01,000

I really can't last that long.

689

00:39:03,000 --> 00:39:04,000

What?

690

00:39:04,000 --> 00:39:06,000

Adam's the next one to chance his arm.

691

00:39:07,000 --> 00:39:10,000

Puppies, kittens, babies, ducklings.

692

00:39:10,000 --> 00:39:12,000

Oh, baby hippo.

693

00:39:12,000 --> 00:39:15,000

But again, he can't last more than a minute.

694

00:39:15,000 --> 00:39:21,000

Puppies, puppies, kittens, kittens, baby hippos, babies, ducklings.

695

00:39:22,000 --> 00:39:27,000

The next man to try to maintain some control is Tori.

696

00:39:27,000 --> 00:39:29,000

In 3, 2, 1.

697

00:39:30,000 --> 00:39:33,000

Gosh, damn it, it's cold.

698

00:39:34,000 --> 00:39:38,000

Tori's jumped the gun with his potty mouth.

699

00:39:38,000 --> 00:39:42,000

On a scale of 1 to 10, I think I peaked out about 15.

700

00:39:42,000 --> 00:39:45,000

And then he finds out he's in double trouble.

701

00:39:45,000 --> 00:39:48,000

Oh my God, it's completely numb.

702

00:39:48,000 --> 00:39:53,000

Tori, thanks for participating, but unfortunately we have to disqualify you.

703

00:39:53,000 --> 00:39:54,000

Why?

704

00:39:54,000 --> 00:39:59,000

Number one, you actually swore during the test, which is what the test is about.

705

00:39:59,000 --> 00:40:02,000

You weren't supposed to swear, so you're out because of that.

706

00:40:02,000 --> 00:40:05,000

And you also lasted past the three minutes.

707

00:40:05,000 --> 00:40:07,000

It could have been because of the swearing.

708

00:40:07,000 --> 00:40:08,000

We don't know.

709

00:40:08,000 --> 00:40:11,000

So I'm done getting tortured is basically what you're telling me.

710

00:40:11,000 --> 00:40:12,000

Yeah.

711

00:40:12,000 --> 00:40:14,000

But can Jamie do better?

712

00:40:14,000 --> 00:40:16,000

We're about to find out.

713

00:40:16,000 --> 00:40:17,000

Fudge!

714

00:40:17,000 --> 00:40:18,000

Fish!

715

00:40:19,000 --> 00:40:20,000

Lighten!

716

00:40:20,000 --> 00:40:21,000

Passenpeffer!

717

00:40:21,000 --> 00:40:25,000

Sure enough, he muddies the icy waters by going the distance.

718

00:40:25,000 --> 00:40:29,000

If you outlast the first test, that automatically disqualifies you for the second one.

719

00:40:29,000 --> 00:40:32,000

Because there's no improvement to be made.

720

00:40:32,000 --> 00:40:35,000

I did, and so I'm out.

721

00:40:35,000 --> 00:40:39,000

So we need two replacements for Jamie and Tori.

722

00:40:39,000 --> 00:40:45,000

Staffers Will and Yvette both take the test and qualify to fill out the chorus.

723

00:40:45,000 --> 00:40:52,000

Now for the PG part of the program, as Adam Fitzgrant with these swearing-in-the-wetter-toy

724

00:40:52,000 --> 00:40:53,000

That's fantastic.

725

00:40:53,000 --> 00:40:54,000

Yeah, okay.

726

00:40:54,000 --> 00:40:55,000

Go do the test.

727

00:40:55,000 --> 00:40:56,000

All right.

728

00:40:56,000 --> 00:40:57,000

See you later.

729

00:40:57,000 --> 00:41:00,000

This Will's sully grants image.

730

00:41:00,000 --> 00:41:03,000

But remember, it's all in the name of science.

731

00:41:03,000 --> 00:41:08,000

They're starting to lose meaning after a while.

732

00:41:08,000 --> 00:41:09,000

Oh, f\*\*k!

733

00:41:09,000 --> 00:41:10,000

Ow!

734

00:41:10,000 --> 00:41:11,000

Okay, ow!

735

00:41:11,000 --> 00:41:12,000

Crap.

736

00:41:12,000 --> 00:41:15,000

Will and Yvette continue the Blue Streak.

737

00:41:15,000 --> 00:41:22,000

Then, sweet Carrie steps up, primed with words that would shock a long shorman.

738

00:41:22,000 --> 00:41:23,000

Ow!

739

00:41:23,000 --> 00:41:24,000

F\*\*k!

740

00:41:24,000 --> 00:41:32,000

It actually seems to be working as Carrie goes on to beat the clock.

741

00:41:32,000 --> 00:41:38,000

And the last one to hope that his mother's not working is the one who's going to be

742

00:41:38,000 --> 00:41:42,000

working as Carrie goes on to beat the clock.

743

00:41:42,000 --> 00:41:46,000

And the last one to hope that his mother's not watching is Adam.

744

00:41:46,000 --> 00:41:47,000

All right.

745

00:41:47,000 --> 00:41:48,000

Five dirty words.

746

00:41:48,000 --> 00:41:49,000

Here they come.

747

00:41:49,000 --> 00:41:53,000

Now let's see if some cussin' makes Adam last longer.

748

00:41:53,000 --> 00:41:54,000

Here we go.

749

00:41:54,000 --> 00:41:56,000

Three, two, f\*\*k!

750

00:41:56,000 --> 00:41:57,000

One.

751

00:41:57,000 --> 00:41:58,000

All right.

752

00:41:58,000 --> 00:41:59,000

F\*\*k!

753

00:41:59,000 --> 00:42:00,000

F\*\*k!

754

00:42:00,000 --> 00:42:01,000

Oh my God!

755

00:42:01,000 --> 00:42:02,000

F\*\*k!

756

00:42:02,000 --> 00:42:09,000

Hard to say if the swearing is helping as Adam pulls out at just under a minute.

757

00:42:09,000 --> 00:42:12,000

There we go!

758

00:42:12,000 --> 00:42:17,000

I got to stop!

759

00:42:17,000 --> 00:42:27,000

Once he's tallied the timings, Jamie rolls out the stats on the swearing.

760

00:42:27,000 --> 00:42:29,000

Everybody was on the plus side.

761

00:42:29,000 --> 00:42:33,000

And the average increase is 30%.

762

00:42:33,000 --> 00:42:34,000

Wow!

763

00:42:34,000 --> 00:42:36,000

It is incredible.

764

00:42:36,000 --> 00:42:37,000

Shouting obscenities.

765

00:42:37,000 --> 00:42:38,000

F\*\*k!

766

00:42:38,000 --> 00:42:45,000

Compared to non-cuss words, this actually increased on average their tolerance to pain by a whopping

767

00:42:45,000 --> 00:42:46,000

30%.

768

00:42:46,000 --> 00:42:51,000

But remember kids, like we always say, don't try this at home.

769

00:42:51,000 --> 00:42:52,000

Oh, f\*\*k!

770

00:42:52,000 --> 00:42:53,000

Sweet relief.

771

00:42:53,000 --> 00:42:54,000

Ah!

772

00:42:54,000 --> 00:42:55,000

So where do we stand?

773

00:42:55,000 --> 00:42:56,000

Well, let's go down the list.

774

00:42:56,000 --> 00:42:59,000

Number one, the myth that women have a higher pain tolerance than men.

775

00:42:59,000 --> 00:43:01,000

Turns out to be true.

776

00:43:01,000 --> 00:43:02,000

Yup.

777

00:43:02,000 --> 00:43:07,000

Number two, the myth that redheads have a lower pain tolerance than regular people.

778

00:43:07,000 --> 00:43:09,000

Surprisingly, that's busted.

779

00:43:09,000 --> 00:43:13,000

And finally, the myth that cursing increases one's tolerance for pain.

780

00:43:13,000 --> 00:43:15,000

That would be confirmed.

781

00:43:15,000 --> 00:43:19,000

You know, while experiencing some of that pain may have sucked, I'm actually quite pleased

782

00:43:19,000 --> 00:43:21,000

with how definitive our results are.

783

00:43:21,000 --> 00:43:22,000

Well, you know what they say.

784

00:43:22,000 --> 00:43:23,000

What?

785

00:43:23,000 --> 00:43:24,000

No pain, no gain.

786

00:43:24,000 --> 00:43:25,000

Ha ha ha!