

## Sawbones 001: Trepanation

Published June 21, 2013  
[Listen here on maximumfun.org](http://maximumfun.org)

[theme music plays]

**Justin:** Hello everybody and welcome to Sawbones, a marital tour of misguided medicine. This is the new program from myself, Justin Tyler McElroy ... That's my new thing, by the way.

**Sydnee:** You're gonna go with your middle name now?

**Justin:** JT Mac.

**Sydnee:** No.

**Justin:** No?

**Sydnee:** No. That's not okay.

**Justin:** Justin McElroy. It's a pleasure to be with you and I'd like to introduce you to my lovely wife, Sydnee.

**Sydnee:** Well, I think for these purposes, should I be Dr. Sydnee?

**Justin:** Dr. Sydnee McElroy, official medical doctor.

**Sydnee:** That's right. But not operating in any official capacity at this time.

**Justin:** Yeah, we should--

**Sydnee:** No official doctoring is being performed. There is no official medical advice being given.

**Justin:** Right. We should clarify that Sydnee, while Sydnee is a medical practitioner, nothing we will ever say will be actionable medical advice.

**Sydnee:** You can tell because the moment that I take a sip of beer I cease to be an actual medical doctor and I'm more of like a George Clooney doctor.

**Justin:** Okay, I got it.

**Sydnee:** At that moment.

**Justin:** At that exact moment.

**Sydnee:** I'm dashing, I'm charming, and everything I say is bull [bleep].

**Justin:** Uh-oh.

**Sydnee:** Are you really attracted to me right now?

**Justin:** I'm terribly attracted to you. Just want to remind you, Sydnee, that we don't curse on this show.

**Sydnee:** I screwed it up already.

**Justin:** I am going to beep that out, that's no problem. I know how to beep.

**Sydnee:** [Laughs] I have to make it through an entire show without using profanity?

**Justin:** Yes. I'm sorry, those are the rules. This is a show for kids and adults alike.

**Sydnee:** What is this, double dare?

**Justin:** [Laughs] No, it's a show about the history of medicine, or at least the stuff that we tried and did not work out so well. Sydnee, what is the... What are we talking about this week?

**Sydnee:** Well, Justin, I thought that we would get started with something really exciting when it comes to medical practice, trepanation.

**Justin:** Trepanation. That does sound exciting.

**Sydnee:** Well, it's exciting for the people who practice it, but I don't know that it was particularly exciting for anybody who had it performed.

**Justin:** Now what is trepanation?

**Sydnee:** Well, I'll give you a clue.

**Justin:** Okay.

**Sydnee:** It comes from a Greek word.

**Justin:** Oh, good. That's extremely helpful for me.

**Sydnee:** Well, I was going to tell you the Greek word.

**Justin:** Okay.

**Sydnee:** Trypanon.

**Justin:** Oh!

**Sydnee:** So now you get it, right? Obviously that means "to bore."

**Justin:** Oh, so you—

**Sydnee:** Something you should be familiar with, right?

**Justin:** Wow, really, just bringing A-level yuks, right?

**Sydnee:** Right? No, like a hole. Like to bore a hole, you know? Like bore a hole in something?

**Justin:** Oh, okay. I gotcha. Alright, I'm with you now. Where am I gonna put a hole? Woah, hey. Hey doc. Woah. Hey. I can think of literally no ... I'm trying to think of places, there's no place I want to put a hole.

**Sydnee:** There might not be any place you wanted to put a hole, but for 7,000 years, humans have been wanting to put holes in their heads.

**Justin:** No, come on.

**Sydnee:** That's true. Trepanation is the process of essentially putting a hole in your skull.

**Justin:** Okay, Sydnee, when I was a young man, just a tot, really, I was pitching a fit because I had to take a nap. And when I was flailing about, like tots do, I slammed my head onto the windowsill. And there was blood everywhere, and I had to get it stapled. So, is it like that?

**Sydnee:** Well, Justin, not at all.

**Justin:** [Laughs] I was very, I was close though. I mean, basically, I have a basic functional understanding of this medical procedure, right?

**Sydnee:** Well, no. because what I would imagine is that when you say you put a hole in your head, you mean that you tore the skin of your scalp, which overlies your skull, which of course is the bone.

**Justin:** Right.

**Sydnee:** Right. You didn't actually break your skull.

**Justin:** It felt like I broke my skull.

**Sydnee:** You don't remember that.

**Justin:** It was extremely painful, Sydnee, I—

**Sydnee:** You have no memory of that. You're making this up.

**Justin:** I'm frankly hurt you brought it up, it was an extremely painful memory.

**Sydnee:** The reason that I know you didn't actually fracture your skull is that they used staples to put it back together.

**Justin:** Right. They did use staples to put it back together, correct.

**Sydnee:** And so it wasn't your skull.

**Justin:** Not technically my skull, no. It felt like... You can acknowledge—

**Sydnee:** It was the skin overlying your skull.

**Justin:** You can acknowledge it felt like my skull broke.

**Sydnee:** Well, I can acknowledge that because I know for a fact that the skin is probably more painful than the skull bone itself fracturing, so it makes sense.

**Justin:** Because nerves?

**Sydnee:** Yes, because of nerves.

**Justin:** Okay, so tell me, what is actual medical trepanation? Why did we ever think this was a good idea?

**Sydnee:** Well, let's be careful when we say "actual medical trepanation."

**Justin:** Okay.

**Sydnee:** That's a loaded concept that you've thrown around.

**Justin:** Okay.

**Sydnee:** What's interesting about the history of trepanation is that, or trephination, with a "ph", if you prefer. I don't know what ...

**Justin:** I don't.

**Sydnee:** I don't really care. Is that when we talk about the history, what we're really talking about is the history of the discovery—

**Justin:** Oh.

**Sydnee:** Of trepanation.

**Justin:** How do you mean?

**Sydnee:** Well, if you were to ask me what exactly was the first moment when a human said, "Hey, I think I need to put a hole in your head in order to make you feel better", I don't know. Because we really don't understand why primitive people practiced this. We just know that they did, and then we've put it together through a lot of context clues.

**Justin:** Okay.

**Sydnee:** Which is really good science. I think, instead of starting 7,000 years ago, when we know people were practicing trepanation, I think we should start in 1685.

**Justin:** Take me back, Syd. Put me in the Wayback Machine, that we own.

**Sydnee:** So in 1685, there were people digging in France. Y'know, just digging in the ground.

**Justin:** They were making that hole where they put all the bodies, right? Humor me!

**Sydnee:** Yes, they were digging a hole to put lots of bodies. Where were the bodies coming from?

**Justin:** Like in the... Dead people would die in France, what they do, they don't have cemeteries, so they put everybody in catacombs.

**Sydnee:** So they put everybody in catacombs, and as they're... Yes, that, sure. And they're digging and ... Give me a French guy accent.

**Justin:** [bad French accent] So, Sydnee, Sydnee... Moi Pepe Le Pew.

**Sydnee:** Okay. Yeah, okay. But you're not a French skunk. You're a French guy who's digging.

**Justin:** [bad French accent] Ah, the digging, she is so hard.

**Sydnee:** And so you're digging. You're in the Neolithic burial site—

**Justin:** [bad French accent] Oh, this Neolithic burial site.

**Sydnee:** ... of Ensisheim.

**Justin:** [bad French accent] Ensisheim, beautiful—

**Sydnee:** Ensisheim.

**Justin:** [bad French accent] Beautiful Ensisheim.

**Sydnee:** Ensisheim.

**Justin:** [bad French accent] Ensisheim!

**Sydnee:** I'm guessing at the pronunciation.

**Justin:** [bad French accent] I am not. I am from there, my grandfather was born and raised.

**Sydnee:** And so you're digging and you stumble across...

**Justin:** [bad French accent] Woah! My... My baguette has struck something—

**Sydnee:** [laughs] Why are you digging with a baguette?

**Justin:** [bad French accent] I am digging with a baguette.

**Sydnee:** Okay, you're digging with a baguette.

**Justin:** [bad French accent] I have fashioned it into a shovel.

**Sydnee:** And you find a human skull.

**Justin:** [bad French accent] Oh no! Not that!

**Sydnee:** And as you pick up this human skull—

**Justin:** [bad French accent] Murder most foul!

**Sydnee:** With the tip of your baguette, the ash from your cigarette that inevitably is dangling from your mouth—

**Justin:** [bad French accent] Oh, I wish I could quit. I am addicted to the little bastards.

**Sydnee:** [laughs] ... it falls through a hole, in the skull, that you find. In the top of the skull, there's a hole.

**Justin:** Why is there a hole?

**Sydnee:** Well, you don't know.

**Justin:** Okay.

**Sydnee:** It's 1685—

**Justin:** Did I hit it with—

**Sydnee:** You don't know anything.

**Justin:** Did I hit it with my baguette?

**Sydnee:** You're really not sure.

**Justin:** Okay.



**Sydnee:** So—

**Justin:** I'm trying to get into this character.

**Sydnee:** Well, you don't know why.

**Justin:** Okay, so I—

**Sydnee:** Why is there a hole? There's a perfectly round hole.

**Justin:** [bad French accent] This is a mystery! I will call Poirot.

**Sydnee:** No, you really don't tell anybody.

**Justin:** I don't tell Poirot.

**Sydnee:** No.

**Justin:** Okay.

**Sydnee:** You make note of it, in terms of you tell your friends.

**Justin:** [laughs] My log?

**Sydnee:** [laughs] You tell your friends about it.

**Justin:** [bad French accent] Dear Diary, the strangest thing happened today...

**Sydnee:** [laughs] You... Maybe like, I dunno, you call... There's not curators, at the time. You call your buddy who, like—

**Justin:** Has like a museum?

**Sydnee:** ... can read, and write.

**Justin:** Okay.

**Sydnee:** And he writes it down as like, "This is crazy. Pierre found a skull with a hole in it."

**Justin:** [bad French accent] Hello, is this Brainy Dave? It's your friend, Pierre.

**Sydnee:** [laughs] Because that's it. That's it. 1685 they find a skull with a hole in it, and basically disregard it.

**Justin:** Why?

**Sydnee:** 'Cause they don't really understand it. They figure, "Ah, it was a trauma. It was some weird... Somebody got a spear through their head and died." The only reason we even know that this happened is because of what happened in 1816.

**Justin:** Now, what happened in 1816?

**Sydnee:** So, they're still digging in France. All of these discoveries are in France. Now, that is not the place where trepanation necessarily originated, it's just where we found out about it.

**Justin:** Okay.

**Sydnee:** So, they're digging again in a Neolithic burial pit, and they find another skull with a hole in it.

**Justin:** That's weird.

**Sydnee:** Not the holes we expect, you know, for the eyes and the mouth and the nose.

**Justin:** [snorts] Right. I gathered.

**Sydnee:** An extra one.

**Justin:** Yeah.

**Sydnee:** A bonus hole.

**Justin:** [bad French accent] What is with these holes? There is two in the front, and two smaller ones, and then a big one at the bottom.

**Sydnee:** So at this point, at this point, the... Scientists start looking at this. Anthropologists and scientists start examining this skull and decide that a hole was intentionally put in this skull.

**Justin:** Now why would they decide that?

**Sydnee:** Because it looks intentional.

**Justin:** Okay.

**Sydnee:** Because it's round. It's perfectly round. It's not something that just happens.

**Justin:** Okay.

**Sydnee:** So they decide there must be a reason. But they also, erroneously, decided that this was done after death.

**Justin:** Oh. Okay.

**Sydnee:** That for some reason, after this person died, a hole was probably drilled in this skull.

**Justin:** Okay.

**Sydnee:** And again, they just kind of put it to rest.

**Justin:** They just decided, "Well, one of life's little mysteries."

**Sydnee:** Right. Except for Ephraim George Squier.

**Justin:** I knew I could count on him.

**Sydnee:** Yes. Ephraim.

**Justin:** Ephraim.

**Sydnee:** And not too long after that 1816 discovery, about, probably about 50 years later.

**Justin:** Okay.

**Sydnee:** So he was a rich guy, an anthropologist, a diplomat and—

**Justin:** A lover, a fighter.

**Sydnee:** A lover, a fighter. A midnight toker, I don't know.

**Justin:** Sure.

**Sydnee:** He was... [laughs]... touring Peru, and he was hanging out at this rich Peruvian lady's house. So—

**Justin:** Okay. Was she beautiful?

**Sydnee:** She was beautiful. Mysterious. And charming.

**Justin:**[laughs] Exotic? Okay.

**Sydnee:** And exotic. And she had a collection of skulls, so...

**Justin:** Okay, I like this.

**Sydnee:** She was a little freaky.

**Justin:** I like that.

**Sydnee:** If you know what I mean.

**Justin:** And I do.

**Sydnee:** And he was touring her home, and noticed that among her collection of—

**Justin:** Are we still in France?

**Sydnee:** No, we're in Peru now.

**Justin:** Peru.

**Sydnee:** We have moved to Peru.

**Justin:** I don't do Peruvian. Go on.

**Sydnee:** Among her collection of artifacts, you know, like spearheads and fossils and pots and all the usual stuff, there's a skull. And what is in this skull?

**Justin:** Jell-O.

**Sydnee:** A hole. [snorts] Jell-O? Did you say Jell-O?

**Justin:** [laughing] I just thought maybe she'd put Jell-O in it. Okay. A hole. There's a hole.

**Sydnee:** A hole. It's a hole.

**Justin:** I should have guessed a hole.

**Sydnee:** And Ephraim is the first one to really look at this and say, "Okay, what is going on? Why are there all these skulls with holes in them?"

**Justin:** But nobody knows?

**Sydnee:** No. So he asks this lady, I have to imagine there's a scenario... I mean, if you read about it, he just said, "Hey, can I take this skull? I think it's special." And she said, "Yeah. Go for it man."

I like to think that he seduced her.

**Justin:** Oh, okay. I like this.

**Sydnee:** Right?

**Justin:** So like, they're in the middle of... They're like post-coitus and he's like, "I'm going to go out and smoke whatever people in Peru smoke instead of cigarettes."

**Sydnee:** Weed?

**Justin:** Weed. "I'm gonna go smoke some weed outside."

**Sydnee:** [laughs] That doesn't sound very—

**Justin:** "Stay here."

**Sydnee:** ... classy or sexy.

**Justin:** "I've made you—"

**Sydnee:** "I'm gonna smoke some oregano." [laughter] "I'm going to smoke the finest Thai basil one can grow."

**Justin:** "I'm gonna smoke some Thai basil outside. Don't follow me. You wouldn't want to anyway, it has literally no psychotropic effects."

**Sydnee:** "And it really hurts your lungs."

**Justin:** "And it hurts your lungs, and it tastes delicious."

**Sydnee:** Hey kids, don't smoke.

**Justin:** Don't smoke.

**Sydnee:** Anything. Oregano. Basil. Sage. Rosemary.

**Justin:** Whatever. The more delicious it sounds, that's the less good—

**Sydnee:** Parsley.

**Justin:** The less good it is for you. So what... So he steals this skull. It's very exciting, he has to leave a bag of sand that weighs approximately the same amount on her pedestal so her traps don't trigger.

**Sydnee:** He takes it to Dan Akyroyd, who makes the greatest vodka that's ever been created.

**Justin:** I don't think that's actually accurate.

**Sydnee:** Okay.

**Justin:** Give me the actual, true thing that really, genuinely happened.

**Sydnee:** What really happened is that he took this skull back to the US, and he presented it to the New York Academy of Medicine.

**Justin:** Okay.

**Sydnee:** And he said, "Hey, doctors, look at this."

**Justin:** "Look at this hole."

**Sydnee:** "Look at this, what do you think was up with this guy?"

**Justin:** "Why is there Jell-O all over it?"

**Sydnee:** Everybody said, "You know what?" They all looked at it and probably like, "Ooh, ohh, eugh" and probably make a lot of expressions and scratched their chins a lot and twirled their mustaches. And finally all decided this is definitely a surgical procedure.

**Justin:** They're just guessing, right? They're just guessing.

**Sydnee:** Definitely. "We can tell this was a surgical procedure, however, we still think that it wasn't done until after the person died, so we have no idea why we're concerned with this."

The reason that everybody was so excited about this, was that it indicated... At the time, the common belief was that humans used to be really stupid.

**Justin:** Right.

**Sydnee:** And that there was no way that an ancient culture could have come up with some kind of surgical procedure, right?

**Justin:** Right.

**Sydnee:** If they were drilling into a skull, it was because they were dead and they were doing something weird and ritualistic and gross and that had no medical benefit.

So to physicians of the time, the idea that maybe they were doing something that had a logical basis, or at least what they thought was a logical basis, was completely absurd.

**Justin:** So they... So you're saying that the idea that it was a medical procedure did not even enter their possibility sphere, because they didn't think that people in olden times even did anything medical?

**Sydnee:** Exactly, because it would necessitate that they had some kind of diagnosis that they were following.

**Justin:** Okay, okay, okay.

**Sydnee:** And I should preface this with...

**Justin:** And they thought that they had just used magic, basically.

**Sydnee:** Right, right. And I should preface this with, the idea that sometimes the skull is fractured, so that someone breaks their skull, it damages the tissues beneath, which causes swelling. And then the swelling could be dangerous, even fatal, to the person. That had already been somewhat established.



So they thought if they found a skull that was already broken, and then had a hole in it, the thought process was, "Oh, okay. Well, they broke their skull, their brain swelled, so they tried to take a piece out to relieve the pressure."

**Justin:** Okay.

**Sydnee:** So this was a skull that wasn't broken and had a hole in it, so none of this made sense. This would insinuate that an ancient culture was able to diagnose some kind of brain process without any labs or tests or really any instruments whatsoever. Or really any knowledge of what was going on. So this was totally... This blew their minds.

**Justin:** Okay.

**Sydnee:** Ephraim was the only one who had any faith.

**Justin:** I knew I could count on Ephraim.

**Sydnee:** The New York Academy of Medicine said, "Dude, yes, it's a hole in a skull. We get it. It's weird. But like, y'know, ancient dudes were weird and they drilled a hole in a skull and we're really not interested."

**Justin:** They did weird things.

**Sydnee:** "Take your weird Peruvian skull back to your mistress and get out of here."

**Justin:** Okay.

**Sydnee:** And he said, "Screw you guys, I'm going to Paris." To meet with, Paul Broca. That's right, I said Paul Broca. I know, it's really exciting isn't it?

**Justin:** Who's Paul--?

**Sydnee:** don't get too excited. Paul Broca.

**Justin:** Who is Paul Broca?

**Sydnee:** Of Broca's Area? Broca's Aphasia? What do you mean who is Paul Broca?

**Justin:** All right. You're just jerking my chain now. Okay, so what did Paul Broca do?

**Sydnee:** Paul Broca was many things. He was an anthropologist, indeed. He was a surgeon, he was a scientist. He studied neuroanatomy and neurophysiology. And he is known, to this day, by medical students and physicians, across the country, as the reason that we all know about Broca's Area of the brain.

Broca's Area of the brain is the third gyrus of the left frontal lobe.

**Justin:** Oh, okay. And now what is a gyrus? Do you have time...?

**Sydnee:** It's a little... It's like a convolution... It's a crease. It's a wrinkle.

**Justin:** Okay.

**Sydnee:** The third wrinkle.

**Justin:** Of the...?

**Sydnee:** Left frontal lobe.

**Justin:** Okay.

**Sydnee:** So the left front part of the brain.

**Justin:** And that's known as Broca's Joint?

**Sydnee:** It's next to the lateral sulcus.

**Justin:** Broca's Joint? Is that what it's called?

**Sydnee:** Broca's area. It works.

**Justin:** Broca's Place.

**Sydnee:** It's where language is.

**Justin:** Oh, okay.

**Sydnee:** It's our language center.

**Justin:** And Broca discovered it?

**Sydnee:** So when somebody has Broca's aphasia, for instance, they can understand everything you say and they want to respond to it, but they can't form language.

**Justin:** Interesting.

**Sydnee:** They can't... Their brain tells their mouth and their lips and their tongue how to work and it won't happen.

**Justin:** So what did Broca make of the skull?

**Sydnee:** Okay. So Broca said, "Dude. This was done while this guy was totally alive."

**Justin:** How could Broca... Everybody's just guessing!

**Sydnee:** Because bone still grows after... I mean, as long as you're still alive, bone keeps growing even after a surgical procedure. So you can tell, if you make a hole in the skull and then the person keeps living, you can see bone growth.

**Justin:** Oh!

**Sydnee:** You can see that.

**Justin:** Okay.

**Sydnee:** So he could tell that this was done while the guy was still alive. So he was the first one to say, "Hey, these ancient dudes were performing

some kind of surgical procedure." He actually, he said that what astonishes him, this is a quote from Paul Broca that I appreciated. "It is not the boldness of the operation"--

**Justin:** How do you choose your favorite Broca quote, though?

**Sydnee:** Mhm. I heard that sarcasm. "What astonished me is not the boldness of the operation, as ignorance is often the mother of boldness." So anyway, at this point they published a paper, Broca published a paper, telling everybody of his findings. And by 1867 trepanation was everywhere.

Everybody was finding, they were just digging up skulls left and right. And what was surprising is that there were a lot of skulls and skeletons that had already been found that had holes in them, it's just that nobody had really noticed or paid attention. Somehow everybody had just refused to acknowledge that there were all of these dead guys with holes in their heads, and what the hell was, heck, was this all about?

**Justin:** I think hell's okay.

**Sydnee:** Is it? I don't know! You censored me!

**Justin:** [laughing] I would never. So we started discovering basically all of these different skulls with holes that... Well, not even discovering, just fuck... frigging... noticing. Sorry.

**Sydnee:** Okay, that's not okay!

**Justin:** That... Just noticing that there are skulls with holes in them all of a sudden.

**Sydnee:** Now here's the thing. Before we get all weird, okay? Because things are about to get weird. I realize that I keep talking about drilling a hole in people's heads.

**Justin:** Yeah, can you keep it like, not scary though, because I really... I just ate.

**Sydnee:** Usually I'd like to go into a really detailed description of the whatever medical thing I'm talking about. But with trepanation, it's pretty straightforward.

**Justin:** What's that?

**Sydnee:** Initially people just used a hard piece of stone, like obsidian or flint, and they would just scrape away bone until there was a hole there.

**Justin:** Okay. That sounds very pleasant.

**Sydnee:** It was an instrument called a tumi, T-U-M-I, a tumi, and they would just scrape away at the bone. Usually they would use kind of a criss-cross pattern until they had hacked away enough and removed the piece of bone. Pretty simple.

Eventually they developed drilling and chiseling tools, like handheld tools, that they could use to remove a piece of bone. And it was usually a circle. They would chip away in a circle until they had created enough little teeny perforations to take the piece out.

**Justin:** Okay. I was gonna say, they'd perforate it, yeah.

**Sydnee:** Yeah. And then finally in the medieval times they had mechanical drills. Nowadays, you would use an electric drill, for this procedure.

**Justin:** Oh, good. Yeah, that sounds much more pleasant.

**Sydnee:** It could be anywhere from a few centimeters to half the skull, and most of them are around--

**Justin:** Wait. Half the skull?

**Sydnee:** Half the skull.

**Justin:** Jesus.

**Sydnee:** It's usually done in the parietal bone. There are just several bones in the skull. It's usually done in the--

**Justin:** Well, since it's all made up.

**Sydnee:** It's up in kind of the side, front part here, do you see where I'm pointing?

**Justin:** Yeah, they can see that at home too.

**Sydnee:** Like not over your ear. Not over your ear, because that's your temporal bone. And then in the back, there's like the occipital bone, and then in the front, there's a frontal bone. So in the side, that's usually where it was, the parietal bone. Let's talk about, because at this point, obviously, scientists, doctors, anthropologists, were wondering why did people do this, right?

**Justin:** Right.

**Sydnee:** We know that the only good reason to put a hole in the head is if there's swelling around the brain.

**Justin:** Right.

**Sydnee:** If the brain is swollen and it keeps just swelling and mashing up against the sides of the skull it's gonna get damaged and you can die that way. So that was an obvious idea, like I mentioned earlier, that people hit their head, broke their skull and so they drilled another hole to relieve pressure. That was an obvious reason.

What we began to theorize is that they also did it for things like... Things that we all treated poorly, back in the day. Headaches. Seizures. The idea that we used to treat possession with a hole in the head, was probably pretty valid.

**Justin:** Oh, good.

**Sydnee:** I mean, how else would you get rid of the evil spirits, right?

**Justin:** But this is all theorizing, right?

**Sydnee:** Right.

**Justin:** I mean, we don't have any hard proof?

**Sydnee:** No, most--

**Justin:** No cave paintings? Excuse me.

**Sydnee:** Most of our ideas about why we did trepanation are really just that. They're ideas. I mean, we're pretty sure that people did it for actual skull fractures. So you know, to relieve pressure on the brain. But as far as the other medical indications, we really don't know. We think mental illness was treated with this a lot. But again, these are all just theories. And it probably would have just been an interesting historical point, if it weren't for one weirdo.

**Justin:** Is it that Paul guy again?

**Sydnee:** No, it's not "that Paul guy." Are you calling Paul Broca a weirdo?

**Justin:** No. I mean, not... I would never besmirch the good name of Paul Broca. I've been a fan of his for minutes.

**Sydnee:** No, I'm talking about Dr. Bart Huges.

**Justin:** Dr. Bart Huges. I like that. That's a dashing name.

**Sydnee:** Dr. Bart was interested in ways to expand his consciousness. And could you interpret that for everyone, Justin? What does that mean, if you are interested in ways to expand your consciousness?

**Justin:** He loves drugggggs.

**Sydnee:** Dr. Bart loved drugs.

**Justin:** Okay.

**Sydnee:** So he was looking for ways to explore the limits of the human psyche and the human intellectual potential. He began studying these, you know, skulls with holes in them, and the idea of trepanation, and he was fascinated by it. He really thought that maybe these ancient people were on to something. And he began to come up with the concept of bloodbrainvolume.

**Justin:** Bloodbrainvolume.

**Sydnee:** I say that as if it's one word because it is written as one word in his book. Bloodbrainvolume.

**Justin:** Okay. Bloodbrainvolume.

**Sydnee:** So the idea was that we could increase the thought processes and the metabolism of the brain if we increased blood flow. Because that makes sense, right? Like, blood carries oxygen to our cells--

**Justin:** I would have literally no way of knowing.

**Sydnee:** ...and if we can get more blood to our brain, we're carrying more oxygen to our cells, which will make them work faster, and better, and we'll be, I don't know, smarter, happier, more enlightened.

**Justin:** Better.

**Sydnee:** Capable of moving objects with our head. There is no spoon. I don't know.

**Justin:** Better at rapping?

**Sydnee:** Much better at rapping. That's really... What Dr. Bart was after was the perfect rapper.

**Justin:** Okay. So he thought he could make the perfect rapper.



**Sydnee:** So this is... I'd like to... Can I quote again? Do you mind?

**Justin:** Sure, please.

**Sydnee:** I would like to quote--

**Justin:** By all means.

**Sydnee:** I would like to quote Dr.Bart as to how he kind of stumbled on to this concept. "I met someone who used to stand on his head for considerable periods of time. When I asked him why he did it, he said it got him high. Later, I was given some mescaline."

**Justin:** [uproarious laughter]

**Sydnee:** "And it was then that I got my first... [Justin continues laughing] It was then that I got my first clear picture of the mechanism, realizing that it was the increase in the volume of brainblood", one word, "that gave the expanded consciousness."

**Justin:** Oh mescaline, what can't you do?

**Sydnee:** Thank you mescaline.

**Justin:** Thank you mescaline for all you've given to us.

**Sydnee:** So what he went on to really theorize is that... Okay, Justin.

**Justin:** Yes, Sydnee.

**Sydnee:** Have you ever seen a baby?

**Justin:** Yes.

**Sydnee:** You know about the soft spot?

**Justin:** Indeed I do.

**Sydnee:** So what is the soft spot?

**Justin:** That's a spot where babies are... When God made a baby, he didn't finish it.

**Sydnee:** Okay, so you don't know what the soft spot is.

**Justin:** Ma'am I do not.

**Sydnee:** Okay. So in the top of a baby's head... Well, I mean, in our heads when we were babies too.

**Justin:** Yeah, any head.

**Sydnee:** There is an area where the bones of the skull... The skull is not one solid bone, okay? It's several bones fusing together.

**Justin:** Okay.

**Sydnee:** But when we're babies there are areas where they haven't fully fused together yet. And that's purposeful, it's to allow room for brain growth as we age. And then eventually all the bones fuse together.

**Justin:** They harden up.

**Sydnee:** There is a spot... There are a couple of spots, actually, where the bones haven't fused together yet when we're babies, and those are what we call the quote-unquote "soft spots" or fontanelles, is the medical term for them. So you'll see, if you take your babies, if you have children, or if you've stolen someone's children, give them back.

**Justin:** But first...

**Sydnee:** But if you're not going to give them back, take them to a doctor. But do give them back. You'll notice that your pediatrician or family physician will check their soft spot, to notice how big it is, has it fused yet? Is it too early? Is it too late? Does it feel like the bones are overlapping? So that's something that we do frequently.

Anyway, the point is the soft spot was already well known, and Dr. Bart theorized that as babies, the reason we were happy and joyful and innocent and naïve is because of the soft spot. The bones of our skull weren't fused yet, so we had room for open mindedness and enlightenment.

**Justin:** So that... Now, I'm not... I'm sort of an amateur doctor. I'm more of a, sort of a semi-pro physician, really, through my studies, and my books.

**Sydnee:** Sure. Uh-huh.

**Justin:** That sounds like bullshit to me. Like, just my uninformed opinion, that sounds like bullshit.

**Sydnee:** Well, it is. But Dr. Bart really believed this. He really thought that the problem with, as we become adults, our skull bones fuse and we are limited in the way we can see the world. So we become cynical and bitter and angry and mundane.

**Justin:** So what was his solution for all this?

**Sydnee:** To practice trepanation and recreate the fontanelle that we once had.

**Justin:** Oh, Jesus.

**Sydnee:** So to put a hole in your head.

**Justin:** Like, that doesn't even make... Like, that doesn't even make... Why would nature make us so that our heads don't close right? I mean, like...

**Sydnee:** He based this on a theory, and I won't get into all of it because I read it and no matter how many times I read it I still can't understand... It doesn't make any sense. But basically what he was trying to say is that--

**Justin:** Is it too technical?

**Sydnee:** No, because it's stupid. Is that we evolved too quickly.

**Justin:** Oh, yeah.

**Sydnee:** We evolved so quickly, and now our skulls close and they're not supposed to and so this is a mistake, not evolution. So we've got to drill a hole in our heads. He believed this so strongly, though, you've gotta give the guy some credit, he believed it so strongly that he drilled a hole in his head to prove it.

**Justin:** Nice!

**Sydnee:** And then he was institutionalized.

**Justin:** No!

**Sydnee:** Yes.

**Justin:** Not that guy whose name I forgot. How could this fate befall him?

**Sydnee:** Dr. Bart spent a few years in a psychiatric hospital.

**Justin:** Oh, no.

**Sydnee:** Because, you know, he drilled a hole in his own head.

**Justin:** Oh, Dr. Bart.

**Sydnee:** Although he says that the moment he drilled that hole in his head he became enlightened. That he understood the world in a way that he never had before.

**Justin:** And dizzy.

**Sydnee:** I would--

**Justin:** And sleepy.

**Sydnee:** I would say blood loss or meningitis as possible reasons for this. But he... None of these things result, or none of these things resulted. He really just... He drilled a hole in his head and he was put in a psych hospital.

**Justin:** Okay.

**Sydnee:** When he got out though, there was a whole new thing out there for him to discover.

**Justin:** What was that?

**Sydnee:** Well, that was LSD.

**Justin:** Ah, alright.

**Sydnee:** So he got out of the psych hospital, I don't know, he found some LSD. I guess it was the 60s, it was everywhere.

**Justin:** Easy to come by.

**Sydnee:** It was just hanging off of lampposts. He wandered the streets.

**Justin:** You get it when you move in the neighborhood. You get a sample of Tide and you get some LSD.

**Sydnee:** He picked up some LSD and he started hanging out with a guy named Joseph Mellen. He did some LSD, he gave Joseph Mellen some LSD and then convinced Joseph Mellen also to drill a hole in his head.

**Justin:** So he's got a whole kind of team now.

**Sydnee:** Good ol' Joey was thrilled with the results, felt enlightened and happy like never before. So much so, that he called up his lady love, Amanda Feilding, we'll call her Mandy, and said--

**Justin:** Let's.

**Sydnee:** ..."Hey Mandy."

**Justin:** "Hey Mandy. It's me. It's Joey."

**Sydnee:** "I had something special in mind for our three-year anniversary."

**Justin:** "Something real nice. Something real tender."

**Sydnee:** "I know you were expecting flowers or chocolates, a diamond, maybe."

**Justin:** "Girl, you know how you're always saying I need to work harder to get inside your head? Well listen, I got it."

**Sydnee:** "And I want to put it on film."

**Justin:** "I'm gonna"... What? Wait, what?

**Sydnee:** Joseph Mellen and Dr. Bart drilled a hole in Amanda Feilding's head and put it on film.

**Justin:** How is that not on the 'Tube? How is that not on the 'Tube?

**Sydnee:** I dunno.

**Justin:** I want to see this right now. How is that not on the 'Tube?

**Sydnee:** It might be on YouTube. I didn't look.

**Justin:** Sydnee, do we do this today? Is this a medical procedure with any relevance?

**Sydnee:** Now this is... Yes. But it's not... We don't call it trepanation. We call it a craniotomy.

**Justin:** Craniotomy.

**Sydnee:** We perform a craniotomy... There are two real scenarios where this is standard. So first of all, if you're gonna have surgery on your brain,

we're going to take a piece of your skull out to get to it. And that's... I think that's pretty self-explanatory, right?

**Justin:** Mhm.

**Sydnee:** I do think it's interesting that if we have to do brain surgery, your neurosurgeon will remove a piece of your skull. And sometimes if the piece of skull has to stay out for a while, because it's normal after a surgical procedure to have some swelling.

So the brain could swell, and you don't want to put the skull back and then have the brain swell and smash up against the side of the skull. I mean, if you think about it really basically it smashes up against the side of the skull and it gets damaged. That's bad.

**Justin:** It's upsetting.

**Sydnee:** So they take the piece of skull, and you know where they put it?

**Justin:** Where?

**Sydnee:** In your abdomen.

**Justin:** Oh. That's nice.

**Sydnee:** And it keeps it there all nice and warm and safe until they're ready to put it back.

**Justin:** I thought you were going to say butt. I really thought... I thought you were going to say butt.

**Sydnee:** Why would I say butt?

**Justin:** It just seemed like... You just put the skull in your butt.

**Sydnee:** No. You put it in your abdomen.

**Justin:** But maybe... Some people tried the butt and it just didn't work.

**Sydnee:** Yeah, no. Okay, so that's one. That's a craniotomy, for a surgical procedure. We also, in an emergency situation, so let's say that you fall and hit your head really hard on something.

**Justin:** Okay. [weakly] Ahhh!

**Sydnee:** Yeah. You might get some bleeding inside your skull.

**Justin:** No!

**Sydnee:** It could be... So the dura is like this thin layer of tissue. It's hearty tissue, it's thin, but it's tough. And it lines the brain. And you might get blood on the outside of it, epidural, or under it, subdural. Either way, it can be a bad situation. Sometimes, if there's enough blood collecting, especially outside, an epidural blood collection, we have to drill a hole in the skull to let out the pressure. To save your brain. To keep your brain from getting--

**Justin:** My precious, precious instrument.

**Sydnee:** ... smushed, by all that blood.

**Justin:** Okay, so there's some legitimacy to this.

**Sydnee:** So there is a scenario in which you might see... I mean, and of course you probably have seen this on ER or I don't know, some other kind of medical show, where you see a doctor take a drill to a patient's head in an emergency situation and drill a hole, a burr hole, to release the blood and the pressure and save the brain tissue. Now, this is rare.

**Justin:** Sure.

**Sydnee:** And this is usually following a trauma, and this isn't something that you see standardly. The problem, I think, is that this procedure has persisted for, I dunno, pseudoscientific reasons? I think that might be a nice way of-

**Justin:** That's a kind way of putting it.



**Sydnee:** ... Of putting it. Right now, trepanation is still being studied as a legitimate medical procedure to increase Dr. Bart's brainbloodvolume and increase our consciousness and awareness. Our intellectual processes.

**Justin:** Expand our brain room.

**Sydnee:** Yeah.

**Justin:** I wanna try it.

**Sydnee:** No, we're not gonna try it.

**Justin:** I wanna try it.

**Sydnee:** The problem right now is that... It's just like with anything, right? So the--

**Justin:** The problem is you won't let me do the one thing I want to do more than anything in the world, is the main problem.

**Sydnee:** So there's an international trepanation advocacy group.

**Justin:** It's all I've wanted and you're just pretending like I don't want it.

**Sydnee:** So you can go to [trepan.org](http://trepan.org) and find out about it.

**Justin:** I can.

**Sydnee:** You can.

**Justin:** You're saying I should?

**Sydnee:** No, I'm not saying you should.

**Justin:** You're saying tomorrow at work I should find out about it and that I should do it? I should find out about it, maybe do it. And maybe do it.

**Sydnee:** You should never do it. But there is a website, and it's by the International Trepanation Advocacy Group.

**Justin:** Which is real.

**Sydnee:** That's ITAG. And what they're saying is that doctors don't want you to know the advantages of trepanation because it can make you smarter.

**Justin:** I knew it!

**Sydnee:** It can make you enlightened.

**Justin:** You are afraid of me surpassing you!

**Sydnee:** That's right. I don't want you to be too clever with that hole in your head.

**Justin:** You're afraid that I'll start beating you at Othello.

**Sydnee:** Right.

**Justin:** And other games.

**Sydnee:** They claim at some of the websites that I looked at, the advocacy websites, that I am worried, as a physician, that it would endanger my medical practice.

**Justin:** Because everybody would be too--

**Sydnee:** Everybody'd be so friggin' smart you wouldn't need me anymore.

**Justin:** [laughing] I love that.

**Sydnee:** That I like to know everything and I can't handle it if everybody's got holes in their heads and they're geniuses.

**Justin:** You're trying to limit the population.

**Sydnee:** I am.

**Justin:** Keep them in a herd-like state.

**Sydnee:** I'm trying to limit you.

**Justin:** Why are you trying...

**Sydnee:** I've got that pill that Bradley Cooper took and I'm keeping it from you all.

**Justin:** The pill--

**Sydnee:** You can't have it!

**Justin:** The pill that Bradley Cooper took was trepanation. He didn't have a limitless pill.

**Sydnee:** A hole in his head.

**Justin:** He got a hole in his head and he had to get a new one every day. Thank you so much for listening to our show, Sawbones. We sure hope you'd enjoyed it. If you could, just take a moment, if you enjoyed the program, first off, maybe tweet about it, you know?

Just get out there and share it. Share with the world. Tell your friends. Tell your mom. Tell your dad. It's safe for kids! Tell your kids, make your kids listen. They might learn something for once, unlike school, funded by people with solid skulls.

**Sydnee:** We're not... We're gonna try really hard not to use profanity.

**Justin:** Just, we're gonna work at it. And if we mess up, just forgive us. You can find us on Twitter. We don't have a Twitter yet, but we'll be on Twitter soon.

**Sydnee:** Well, we each have individual Twitters.

**Justin:** Yeah.

**Sydnee:** Justin's at @justinmcelroy.

**Justin:** And she's @sydneemcelroy. We are so pleased to be a part of the Maximum Fun network. Thank you to them for having us on their podcasting station. It's more of a hub, really.

**Sydnee:** I know. We really appreciate it. I don't feel worthy, so thank you.

**Justin:** I hope you'll check out all the other programs on Maximum Fun, like Wham Bam Pow, One Bad Mother, The Dave Hill Podcasting Incident, a little show called My Brother, My Brother, and Me.

**Sydnee:** My Brother, My Brother, and Me!

**Justin:** Jordan, Jesse, Go! Bullseye, and Judge John Hodgman, and a host of others. So thank you for listening to Sawbones, a marital tour of misguided medicine.

**Sydnee:** And don't drill a hole in your head.

**Justin:** Don't drill a hole in your head.

[theme music plays]

Maximumfun.org

Comedy and culture.

Artist owned.

Listener supported.