



**TURN AUTISM AROUND**  
WITH DR. MARY BARBERA

Transcript for Podcast Episode: 045

## *Problem Behaviors Related to Pain and the Four Functions of Behavior*

Hosted by: Dr. Mary Barbera

You're listening to the Turn Autism Around podcast, episode number 45. In today's episode we are talking all about pain and problem behaviors that can be related to pain and related to medical issues.

So before we get started, I did want to let you know that this episode and all of my episodes so far have been sponsored by my free online workshops, and whether you're a parent or professional, you can attend a free workshop to learn more about my step-by-step approach to treating autism in toddlers through teens, you can go to [Marybarbera.com/workshop](http://Marybarbera.com/workshop) to find out more. So let's get to the special episode all about problem behaviors related to pain.

*Welcome to the Turnout Autism Around podcast for both parents and professionals in the autism world who want to turn things around, be less stressed, and lead happier lives. And now your host, autism mom, behavior analyst, and bestselling author, Dr. Mary Barbera.*

Welcome back to another episode of the Turn Autism Around podcast. I'm your host, Dr. Mary Barbera, and today I am going to talk about what I consider to be a very important issue in the autism community; and we are going to talk about the four functions of behavior, and what I consider to be the forgotten function; that being automatic negative reinforcement, which I'm going to talk about in a little bit.

But before we get there, I also want to talk about lectures that I've attended and a question that I asked to Dr. Brian Awada and Dr. Tim Vollmer, who are both experts in functional analysis, and I asked them both three years apart what kind of studies I was interested in, studies related to automatic negative reinforcement. And both of them told me that there have never been a published study on problem behaviors related to automatic negative reinforcement, which I was kind of shocked, but I hopefully as I go through this podcast, especially if you're a parent and you don't know the functions of behavior, I'm going to clear that up hopefully in just a few minutes. It's kind of a complicated topic because I am trying to talk to both parents and professionals, and functional analysis is one of those things that gets a little bit tricky.

But let me start by saying that I have strong feelings as a registered nurse for over three decades; as an autism mom to Lucas for over two decades; and as a board certified behavior analysts at the doctoral level for 15 years; I have strong feelings that many of our children and clients with autism are having problem behaviors related to pain or medical issues. And that's what I want to discuss today. And I have exciting news in that I have an interview schedule with Dr. Tim Vollmer so that should be playing in the next week or two right here on the podcast. So stay tuned for that.

But before I interviewed Dr. Vollmer, I did kind of want to summarize some of this automatic negative reinforcement, which like I said, it's kind of a confusing topic and I wanted to sum up some of the things I learned from Dr. Vollmer at the 2019 national autism conference at Penn State. It's every August is at Penn State. It's a great conference and I attend, you know, some years and I attended this year and it was excellent. So we are going to link Dr. Vollmer's whole three hour lecture in the show notes of this episode. We'll link it both this week and we'll also link it when Dr. Vollmer is on.

But before we get into the four functions of behavior and some of the more complicated things, let me talk about Lucas's journey with autism and medical issues and problems, behaviors related to those medical issues, and hopefully that will make a little bit more sense. I do want to say that I have done several video blogs and a few podcasts on the topic of medical issues and teaching kids how to tell you when they're in pain, the importance of ruling out medical problems, teaching a child to take medicine, those sorts of things. I also interviewed Lucas's psychiatrist, Dr. Michael Murray, on podcast number 28. So anytime I say something in a podcast is most likely going to be linked in the show notes or you can simply just Google 'Mary' 'autism' and the topic you're interested in, and sure enough something will probably pop up because I have been doing weekly video blogs for a few years as well as podcasts since January of 2019. So I am producing a lot of content. So if you have a specific topic that you're interested in, that's the way I would recommend you proceed.

So let's get back to Lucas. Okay. So he was diagnosed the day before his third birthday. He was a pretty mild mannered kid; didn't have any major self-stimulatory behavior, didn't have any aggression or self-injurious behavior. He looked pretty typical if you just spotted him across the room or even at a birthday party. And he had mostly a major language issue and social skill deficit as well. So when he was six, though, he all of a sudden, had acute onset tics, both motor and vocal tics. And over the course of trying to figure out where that came from, cause it was very abrupt, the one day he started with the vocal tics, the next day he had motor tics and vocal tics. And pretty soon I was studying ABA at the time. I was getting my certification at Penn State through their distance learning program. And I was trying to figure out why he was having these medical issues of tics.

At the same time he was irritable; he bit two people the same week that he got these tics, which was very unusual. He hadn't bitten anybody since he was two, way before his diagnosis. So something was going on. And luckily I Googled acute onset tics and found a thing called PANDAS, which is now known as PANS. And it stands for PANDAS, stands for pediatric

autoimmune neuropsychiatric disorder associated with strep, that has been changed now to pediatric autoimmune neuropsychiatric syndrome because what they found out over the past 15 years since Lucas had his acute onset tics was that a lot of times it's not related to strep. It might be related to Lyme disease. It might be related to staph infections or Mycoplasma. There's just a host of different bacterial infections and viral infections that could cause pans or pandas, which is tics, obsessive compulsive disorder. You know, all of a sudden your child goes from not being that obsessive to being extremely obsessive. It can cause major sleep problems. It can cause anxiety or depression. Typically developing kids can get PANDAS all of a sudden.

So I did also do a video blog on pans and pandas a while ago, but my point is I was trying to figure out the behavioral reason why Lucas was biting that week or what the behavioral reason was that he was irritable or even that he was having tics and there was no behavioral function. It was basically a medical issue that was causing this, which is a behavioral function. And we're going to talk about the functions of behavior in just a second. But I want to go on because that wasn't the end of it. When Lucas was six, he got these acute onset tics. We treated them with antibiotics. The tics went from 500 a day to zero; drastic improvement over the series of the next several years we basically treated Lucas every time he would get tics with antibiotics and it would go down.

And it wasn't until he was 14 that he ended up with burping tics that were not responding to the antibiotics. We saw a specialist, he was diagnosed with chronic allergies, sinusitis, and pans, the pediatric autoimmune neuropsychiatric syndrome. By that point he was having burping tics, he was having aggression, he was having self-injurious behavior, and a lot of kids, a lot of people say, well they're going through puberty and this and that. And it's like with Lucas, a lot of times he would have problem behaviors. It was related to pain when he was a teen, and then when he was an older teen he was then having problem behaviors, aggression, and self-injurious behavior related to being startled or being in pain. So it was this confusing maze of situations. And it wasn't until he got on the right medication to calm his nervous system down that we saw aggression go to zero levels and self-injurious behavior go down dramatically as well.

And we're fortunate because I'm a nurse and a behavior analyst. My husband's a physician. Lucas is vocal and he can say that his head hurts, but he's not conversational and he can't tell us, he can't describe the pain. A lot of times he'll have self-injurious behavior before he'll even tell us he's in pain. And so it's still is a very confusing situation. But over the years, but he's stable now thank the Lord, he's 23 years old right now and his self-injurious behavior is once every month or two. His aggression is down to zero levels. I think he had one in the last two years. So really under control.

Had we not found the medical reasons for his problem behaviors though, I fear where he would be at the moment. And that's why as a behavior analyst in the past when I've gone into residential placements and ABA schools and classrooms and I've seen kids with the same or less language than Lucas having severe problem behaviors, aggression, self-injurious behavior, property destruction, and I'd seen staff with bite guards on their arms and kids with helmets.

And really as a nurse, it just breaks my heart because I'm thinking, if Lucas has all of these medical issues that we had to be such a detective over, these poor kids are really suffering probably with medical issues that are at least contributing to their situation. So our behavioral ethics code says that we need to make sure that medical issues are ruled out before we treat behaviorally.

But I'm here to tell you if you don't know already, that we can't rule out medical issues. And just because the child went to the doctor a month ago and they didn't have an ear infection or they went, you know, two months ago for a cat scan or five months ago and they had this test done, it doesn't mean that medical issues are ruled out now.

And unfortunately general pediatricians, general family practice doctors, even specialists are really ill-equipped to handle and to weed out medical issues on kids especially that don't speak or aren't conversational, even kids that are conversational. I remember just last week I ended up hurting my arm or shoulder or something and I couldn't even locate the pain. And so I had to have it assessed because I couldn't tell if it was coming in the back of my shoulder, the front of my shoulder, you know, and I am of course fully verbal and vocal and I should be able to pinpoint what the issue is. But sometimes with pain that kind of comes and goes and goes a little different, and you, it's hard to describe even for people that are conversational. So for kids that aren't conversational, this is really where I want to focus a lot of time because there has not been any published studies on automatic negative reinforcement or pain. We owe it to our kids to look at this a little bit more seriously.

So just to catch some of the parents and late people up to speed with these functions before I go on too long. So there are four functions of behavior, and this is well documented in the decades prior to me becoming a behavioral analyst. But there are four functions. I talk about these functions in my book, *The Verbal Behavior Approach* in chapter two, but I gloss over the automatic negative, which we'll talk about last.

So let's talk about the three functions that all behavior analysts are looking at on a daily basis, and then we're going to talk about the last one. So we have, we have two functions that have socially mediated in front, socially mediated positive reinforcement, socially mediated negative reinforcement. So all socially mediated means is people are involved; it's socially mediated. So socially mediated, positive reinforcement the classic example would be you have a child at the grocery store. The child has some kind of problem behaviors because he wants candy, and then you either negotiate for candy or tell him next time, or when you get home you'll get something special. And so it ends up reinforcing that crying, whining, biting, whatever the situation is. So socially mediated positive means that you're giving the child something, in the past he's gotten something. This is shaping up this behavior.

Socially mediated negative: again, people are involved. But this example is the child has problem behaviors because they want to get out of something. Like time for a bath. So the child has problem behaviors and then it's like, well they just had a bath last night. Guess you don't really need a bath. Meanwhile you're negotiating and withdrawing the demand for bath

problem behaviors. So socially mediated negative. We see socially mediated functions all the time in schools and homes and with their therapists, because demands are being presented; reinforcement is being given; there's interruption to reinforcement, present more demands. And so we end up having a lot of socially mediated functions going on, especially during engaged time.

Then we have two other functions: the automatic positive reinforcement, and that is when there is some kind of behavior that results in positive feelings, positive mood. Like I talked last week when I did the whole podcast on stimming, I talked about a little boy, two year old who was banging his head on hard and soft surfaces just because he was way under-engaged to the point where he was banging so much for three hours a day that he ended up with an open lesion on his head. So that's kind of an extreme example, but he is getting some kind of positive reinforcement for banging his head to the point where he had the open lesion.

And then we have our last function, our forgotten function, which I glossed over in my book. I talk in my book about how we should just make sure that there's no medical problems, have the doctor rule out medical problems, and then we're good and we can just work on these functions. So the last function is that automatic negative reinforcement and that means that you have behavior, in this case problem behavior, related to in the past when you've done that behavior, it's actually removed some pain or some uncomfortable situation.

So in Lucas's case, when he gets a headache or gets startled, he actually bites his knuckle or hits his head or grab somebody to alleviate the pain or the startle. Think about like if you're in a scary movie and you're just so scared, you might grab the person next to you and hold on tight or if you're in pain... If you're getting some kind of procedure done, you might grab somebody's hand and hold it tight, like during childbirth for instance, to try to alleviate that pain. So that is the automatic negative reinforcement. And over the past two decades I've seen with my son and my clients, a large number of kids who I believe are having some kind of pain or having some kind of medical issue.

I've seen a number of my clients who... I had this, this boy we'll call him Nicholas and he, I knew the family, I knew the child since he'd been two, he was in my local area. And I was in his classroom as a consultant with the large state grant I was involved in. And they called me I was supposed to go in the next day and they called and they said, you know, you're coming tomorrow, right? And I said, yeah, yeah, I'll be there. And they said, well, Nicholas he's in sixth grade at this point. And he had more language than Lucas and he was, you know, included for some subjects. They said, Nicholas is peeing in the corner of the classroom. And you know, the principals talking about moving him to like a more restrictive environment. And I'm like, what?

So I said, okay, you know, I'll be there tomorrow. I'll definitely take a look at Nicholas first thing. So I go in and what I see is that Nicholas is actually having tics. He was having eye blinking, severe blinking very fast, very rapid, very consistent. And he's also throat clearing. And right away I said this looks like tics. It looks like pans. So, of course, I'm a registered nurse but I'm not in that role there. And another one of our codes as a behavior analyst is to avoid multiple roles.

But it's really hard when you are a medical professional, when you're an autism mom, when you have all this experience to that hat off and not to, I mean, we all need to do what's best for the child.

And so in that case, you know, we did call the mom and we did tell her to Google pans and tell her that we would recommend a doctor visit, and which she did. And Nicholas was put on antibiotics and he went back to baseline. But you know, there's an example and that's just one of many examples where if the child is ill that we really have to take that seriously and notice it, you know. Like the other teachers were just noticing that he was peeing in the corner of the classroom, which was highly unusual for Nicholas, but they weren't even looking to say, Whoa, what's going on with him? He looks like he's different. He's having tics.

So just looking for these things and following up and having the family follow-up with the doctor can really save a lot of aches. So what I want to say, and I am excited to interview Dr. Vollmer, hopefully that will happen and we will be able to publish that podcast in the next week or two. But he did have several things to say about automatic negative reinforcement, especially because I asked him a question about it and he said there were no studies on it. And I was kind of, you know, upset that, you know, if we are, if we say there are four functions and we're really only studying three of them, then I think we're doing a disservice.

And one or the other really interesting things that Dr. Vollmer said, which I hadn't I thought of or read before, was that especially with biting, you know, kids that bite, Lucas's bites his finger or his hand, or kids that bite others, biting is pretty common in all kinds of animals, especially when they're in distress and pain. And so even before there was anesthesia, you know, biting on towels and biting down to kind of take the pain away from other areas of their body.

So I do think that there is a huge need, especially for kids who bite, kids that can talk and tell us their pain, to really be looking at this pain attenuation, this automatic negative reinforcement. And even if it's just child by child, doesn't have to be a large study. With Lucas for instance, when we treated him with antibiotics and his tics went from 500 to zero, I mean that's an AB design. I was just studying for my ABA certification. So of course, you know, I wasn't in any position to be publishing anything. But if you are looking, whether or not you publish or not, but just to keep looking, knowing that ruling out medical conditions is not just a onetime thing. It's an ongoing need to help our kids reach their fullest potential.

So a few things you can do a until next time, til we get to hear from Dr. Vollmer Is like I said, you can always Google 'Mary' 'autism' and the medical issue, you know, how to teach kids how to tell you they're in pain and those sorts of things. Anytime you have a topic that you're concerned about. And I do think that I am in a unique position as a mom, a nurse, and a behavior analyst, and I hope that these kind of podcast episodes and discussions and short video blogs will at least help you recognize when there is a child with potentially a medical problem that could be causing or contributing to problem behaviors.

One of the things you can advise parents to do especially is I have a system where I keep a calendar, and I've done a video blog on this as well, keep a calendar dedicated towards Lucas to record his allergy shots, record any new medication or medication dosage changes, to record any agitation, any self-injurious behavior. We have that on the calendar, on his paper calendar. I bring that to a psychiatrist every six months for his checks. I bring that to his family practice doctor. It helps me keep track when his, you know, self-injurious was once a week and when we started this med and when we stopped this med and it's helped us keep track. I've had calendars for years. I do have a three step guide that's great for both professionals and parents and this guide talks about one page assessment, one page plan, and how to keep data on a calendar. I think it's really great, especially for families and parents, so you can get that free guide at [marybarbera.com/join](http://marybarbera.com/join).

I do also think professionals will really benefit from the first and the second step being the assessment and the plan. And even if you have typically developing kids who have medical issues, I would get any child or adult with a medical issue, keep a calendar so that you can keep track of your meds, when the doses change, your symptoms. For some kids we use the calendar for sleep or potty-training or for community outings to measure their success in the community outings. I mean I have just found a lot of great things by using my calendar system, so you can get that three step at [Marybarbara.com/join](http://Marybarbara.com/join), and if you would like to learn more about my step by step system, you can attend a free workshop at [Marybarbera.com/workshop](http://Marybarbera.com/workshop).

I hope you enjoyed this episode about the forgotten function and medical issues causing or contributing to problem behaviors, and I hope that you will tune in next week for hopefully Dr. Tim Vollmer's interview on some of these same issues. So have a great week. Thanks for tuning in and hopefully you got a lot out of it, and we can help our kids reach their fullest potential no matter where they're at on the spectrum or how old they are. So have a great week and I'll talk to you soon.

Thanks for listening to the Turn Autism Around podcast with Dr. Mary Barbera. For more information, visit [Marybarbera.com](http://Marybarbera.com).