



## Gluten Free Society Presents:

### Gluten and Drugs – Advice from a clinical pharmacist.



This month, I invited a pharmacist specializing in gluten found in medications to speak to you about the potential for hidden gluten in medications. Before I get into the interview, I want to point out another topic revolving around the use of medications: Drug induced nutritional deficiencies. Many of the side effects of medications revolve around the fact that they can cause nutritional deficiencies. I have put together a special audio and more information on [this invaluable topic here.](#)

All the best,

Dr. O



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**Dr. O:** This is Dr. Osborne with Gluten Free Society. I have a very special interview for all of you in Gluten Free World. Today we're going to be talking with Steve, he's a pharmacist.

I'm going to turn it over to you and let you introduce yourself and tell us a little bit about yourself, who you are and what you're up to.

**Steve:** My name is Steve Plogstead. My full-time job is as a clinical pharmacist at Children's Hospital in Columbus, Ohio. It's called Nationwide Children's Hospital. I've been there for a little over 20 years.

Part of my coverage is nutrition for pediatric patients. I also do gastroenterology on the side as my clinical activities. Somewhere in 1995 my practitioner who is an expert in Celiac Disease asked me to give a talk to her local support group. There were about 75 patients at that time.

They asked me to talk about gluten medications. I knew very little about gluten or Celiac Disease back in those days. Again, this is 1995 and I discovered that the most recent article about gluten medications was written in 1984. There was really nothing written way back then and nothing between 1984 and 1995 of any substance.

I offered my services to help these people determine if these medications had any gluten in them. As I started getting more questions I put them out using a free e-mail service like Gmail. A few years later I purchased my own website called Gluten Free Drugs which I run just from home or my office depending on what time I have to do that. That is how I got started in this business. Ever since that I'm just posting all my questions and answers online as I get the results.

**Dr. O:** You just spend a lot of time communicating with a lot of different pharmaceutical companies trying to discern hidden origins or hidden potential gluten and then sharing that information with people who are trying to follow a gluten free diet?



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**Steve:** That is correct. Most of the information I have online I actually obtained myself. I'm lucky to have pharmacy students that I mentor every month. I put them on some questions as well. Other people who have called drug companies will send their information to my gluten free website and I'll post their interaction with the drug companies. It's a combination of me and celiac sufferers.

**Dr. O:** It's probably a really hard task. It's ever changing. I imagine if the manufacturer changes some ingredients it's really hard. Unless you have e-mail notifications from the manufacturer it would probably be a pretty daunting task to keep up with it 100%.

**Steve:** Not only that. Back in 1995 when I first started there were very few drug companies who actually understood what I was asking. As time went on I started to get some pretty definitive information from these companies. As time went on even more we had a little less truthfulness from some of the manufacturers.

I think they were worried about lawsuits and such. They started giving me less than full disclosure about the potential contamination of medication. That just got me to come up with more and more questions. With all these interactions with these drug companies I learned a lot about what they can and can't say.

I learned more and more about the pharmaceutical manufacturing process. The patient would ask me a specific question. They would call the drug company they would get one answer. I would call the drug company and I wouldn't want to call it a different answer but I got a more enhanced answer. Because a lot of times the consumer doesn't get the same drug information person or group that I do.

They get the consumer side that seems to answer the question a little differently than the professional side. With them not disclosing as much information as I would like them to I would ask very pointed questions. Sometimes almost trying to trap them into giving me an answer. They can only give you a certain answer that their company will sponsor.

I would ask more and more specific questions about it trying to find out what I needed to find out to determine the potential for contamination.



**Dr. O:** Wow. That's something that I see a lot clinically as I have my patients currently. I really press them and ask them to sit down with their doctor. Their doctors don't really seem to know.

I've also pressed them to sit down with their pharmacist. We found that a lot of the pharmacists don't know. I've asked them to call the drug companies and as you said we've found that the medication companies will only divulge certain quantities of information. Really it's kind of a web to navigate.

I'm real grateful that you've put up your information and findings online. I'm going to start directing a number of my patients and visitors to your site to try to discern and get more information.

**Steve:** I'm happy to. Sometimes I feel like I'm going to shoot myself in the foot but when I get questions from a consumer about something they need to know for themselves often the question that they send me is a little more complex than I can give them in an e-mail.

Probably several hundred times I've given the consumer my private phone number. I ask them to give me a call. I've spend two hours on the phone with a consumer to help them get through the questions that they really need to know.

Sometimes the question they're asking isn't what they need to know. I find it much easier to go in depth. Telling you this on a broadcast will probably cause my minutes to go up. I'm on Eastern Standard Time so I let people know when I answer a question if we're going to make the connection on what part of the country I'm from so I can communicate with them.

I can either do it from my home or the office. My hospital doesn't exactly 100% support what I do. They understand how this is a great public service so they're very tolerant of the time I spend with Celiac Disease. I didn't mention it before but the cost of the gluten free drugs website comes out of my own pocket.

If you look there is no advertising from drug companies or from any company. I do give links to food manufacturers or other societies who are doing something



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good for the customer but I don't take any money for doing this. I never want to do anything commercial. I don't want anybody to get the feeling that I'm beholden to anybody for supplying the information.

**Dr. O:** That's good. We could all stand to use a nonbiased source of information. Especially on this particular topic where it's just a matter of whether or not we have the medicine that's been is even safe to take. I can tell you first hand from a number of my own patients a lot of times the hold up of their treatment is cross contamination in the medication. It's good to have a valid source to go back to.

**Steve:** I'm glad you brought up the cross contamination thing. Some drug companies will actually tell you, "We can't answer the question of whether it's contaminated or not but we do more than one drug in this facility and blah, blah, blah." That's sort of a chicken's way out. Pharmaceutical manufacturers don't have powders lying around.

They don't do more than one drug at one time in one sterile room. It's not like a food manufacturer or a bakery where you have a lot of floaters in the air. These things are sterile environments. As a physician you walk into an operating room and you realize that people are gowned.

They're pretty sterile and a pharmaceutical manufacturing facility is every bit as sterile looking as walking into an operating room or working in NASA trying to get the shuttle to go airborne. You just can't afford any dust. That's how they treat their pharmaceuticals. There really is a very small chance of cross contamination even though the drug companies will try to tell you that as one way to get out of giving you a better answer.

**Dr. O:** It's their kind of legal catch all then.

**Steve:** Yes. "We make 30 different products in this facility." Yes. Each time they make a run they have to tear the machinery down and sterilize it. If for some reason they make another product in that room at another point there is a second level of decontamination that goes along with that first decontamination.



Again, the chances of contamination from something leftover in these highly polished, stainless steel rooms are very small. You're not going to find a little hunk of food left in the corner of the facility. It just doesn't occur.

**Dr. O:** They just try to use that mainly as a waiver of liability to say if you got potential cross contamination we do process other drugs in this facility. I've seen them break these rooms down. They wear suits, they go in, they use cleaning agents and they're very, very thorough. It's actually a wet room with a drain in the middle. This is how the equipment gets cleaned.

**Steve:** Yes. In fact, I was just at a pharmacy conference a little over a week and a half ago. I was walking by one of the manufacturers booths and low and behold they had a little video of just their facility.

I jumped at it. I asked if they could please send me a copy of that video because when I give presentations people don't understand the extent of how these places are cleaned and how sterile they are. I want to use it as a visual for people to understand just how clean those rooms are. You can take me in there and I'll surgery done in that room. I'll be just as happy as can be because I know there are no bacteria in there.

**Dr. O:** What a complex issue. With medications already there are the risks of side effects. There is the potential for there to be gluten in the medication. The side effect reaction versus the potential for an allergic reaction or an autoimmune type of reaction.

Then you have fillers and other things that are used in medications that could also be potential factors that patients could be allergic to. It's hard to please absolutely 100% of everybody which I think is one of the reasons why we need full disclosure of what we're dealing with when we're prescribing something.

**Steve:** Exactly. You brought up a good point. Infrequently are any two medications made with exactly the same fillers in exactly the same ratios as another product. It's the difference in the excipient and the ratios of these excipients that some people may find that it doesn't fit their genetics.



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Like I said, I'll find a product that has absolutely positively no starches in it whatsoever. None of the fillers come from or have any relation to any starch. So the chances of contamination in this case are almost nonexistent. However people will express that they've had something like a celiac reaction. They swear there's some contamination.

It could be just one of the fillers in a particular ratio that's in that product. By switching to another product from a different manufacturer even though the excipient may be similar they may not find that symptom show up. Sometimes you actually have to go to another gluten free medication to get rid of the symptoms you got from another product that is pretty much gluten free.

**Dr. O:** Do you run into scenarios where compounding is really the only solution?

**Steve:** Yes. There are a number of compounding pharmacies. Not like the fiasco we ran into in New England but there are a lot of small local pharmacies that do compounding on a specific prescription that people felt more comfortable going that route. It's a lot more expensive.

These companies will even tell you even if you want them to make a Tylenol type of product they still require a prescription from their physician. As long as the physician knows that they're going this route in their medication. These companies are very high quality. If they can get a hold of the active ingredients they can produce any type of strength that the consumer would need. It doesn't happen very often that a celiac sufferer has to go that route but that does happen.

**Dr. O:** What in your experience are the most common sources of gluten exposure in the medication? What are some of the ingredients being used in things that people need to know if maybe they're looking at the inactive ingredient list given to them by the pharmacist? What are some terms that they should be aware of that are common in your experience?

**Steve:** In any pharmaceutical manufacturing world the word "starch" means that it could come from any source. Whereas in the food manufacturing world the word



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“starch” means that it must come from corn. If the excipient that’s listed on the package insert or wherever they looked doesn’t say corn starch it just says pre-gelatinized starch, sodium starch glycolate, modified starch or the word “starch” that’s not precluded by the word “corn” those are potential sources of contamination because those could come from a wheat based source.

I have never ever found rye or barley as a starch source in a pharmaceutical. If I describe it in the future it’s going to be wheat starch. Wheat starch will be the only starch in a pharmaceutical product other than corn, potato or tapioca. The offensive gluten will be wheat only.

Sodium starch glycolate, pre-gelatinized starch or whatever they could come from a wheat source. However in the United States I’ve found that sodium starch glycolate only comes from potatoes. Pre-gelatinized starch predominately comes from corn. That’s where the consumer would have to go a little further to ask the specific question of what is the source of starch.

The company may say, “Well what’s the lot number because we can change these from week to week to week?” Which is another one of those statements that pharmaceutical companies make. It’s stretching their truth a little bit. The law says they can switch the source of starch. If they said, “Sodium starch glycolate” today they could have potato tomorrow, they could have wheat. They don’t usually interchange those.

**Dr. O:** That was actually my next question. I know this is going to vary but my thought process has always been if I can save a penny here and quarter there on particular types of starches based on their current prices and it doesn’t affect the active ingredients in the medication. That’s a business decision I would see a company go with.

**Steve:** That is absolutely true. The only other side of that coin where I see some of the pharmaceutical manufacturers would hesitate in doing that is just like wheat starch is totally different from corn starch the flow characteristics of a wheat starch is different than a corn starch. If you do have a sodium starch glycolate



that comes from wheat the flow characteristics of that particular starch is going to be slightly different than the predominant potato they use. If that's the case when the FDA does their normal inspections of these drug manufacturers if they find this tablet or capsule doesn't dissolve like the standard it's held to it will cause a recall.

Even though you can switch the sources of starch there's the potential that things won't flow through the tablet well. Some of these excipients or fillers are there so the powder flows evenly and is absorbed evenly. If for some reason clumping occurs during the absorption process and the drug isn't absorbed the manufacturer will be shut down for a significant length of time while the FDA investigates why their product isn't dissolving like it should. That will cost them more money than the \$.07 a ton they might save by switching starch sources.

If you're using potato you might use a different manufacturer's potato but the chance of them going to a corn based sodium starch glycolate is actually less than people think. The drug companies will always tell you that they can change it at any time they want and they don't have to disclose it. That's very true but it's not practical to do that. I haven't come across anybody yet who's done it.

If I've gotten some lot numbers from different people and I've called those lot numbers into a drug company they will give you the same answer every time.

**Dr. O:** That brings up another question. Let's say that this month we're using this supplier over here for potato starch. They're just a company that primary processes potato starch. Next month we can get a better deal with another company.

We're still using potato starch but in a facility that also processes grain, wheat or other products. Is there a standard in the pharmacy industry from gluten sensitivity testing of raw products when they come in? Is there a 20 parts per million standard or is that not something that's done?

**Steve:** No and that is being fought tooth and nail by the manufacturers right now. They don't want to have to do that. There is no legal requirement for any of that testing



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to be done at any level in a prescription or over the counter drug product. It's just not required.

There are a couple of issues that have gone before congress. There's one right now for disclosure. There are other attempts for other people to try and get regulations through to congress. We don't ever think that in the next five years it's going to get done because there is just not enough push and there's a lot more money coming through the manufacturers to stop it than there is to support it.

The food manufacturing people have gone so much farther than the pharmaceutical manufacturing. There is no requirement and I don't foresee that requirement actually coming to light in the foreseeable future.

**Dr. O:** Even if we have a product that has potato starch it's a very likely possibility, albeit I don't think anybody has quantitatively done the math, that that particular form of starch could be cross contaminated with potentially enough gluten to create a reaction in somebody with Celiac Disease?

**Steve:** That is a potential in that aspect. The likelihood of that happening is pretty small because you'd have to have a pretty large accidental contamination to occur in the bulk that they use. That is the one thing that still is out there that nobody can actually predict. That will be the one thing I wish I could get my hands on and get that done so those people have to do some sort of testing even though we don't have a legal definition of gluten free in the United States for pharmaceuticals.

Like the one drug company Paragould they claim all their drugs are gluten free. They use 20 parts per million as their definition of gluten free. There is no requirement like that from the suppliers. A lot of the drug companies do not do final testing.

**Dr. O:** I would imagine that the market place and the demand would bring to light some of these companies wanting to manufacture specifically for people looking to maintain gluten free. You would really capture a market, so to speak, that's a really large market.



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**Steve:** Absolutely. I think that's probably what's going to happen before you'll see the drug companies doing testing. You might find them selecting a manufacturer based upon some other quality assurances. Anybody who produces excipients for pharmaceutical manufacturing concerns they have a set of standards themselves that they must meet.

It's not like you can buy bulk corn flour, corn powder from your local mill and sell it to a drug company. It's an incredibly complex set of regulations and inspections that occur to make sure that they're buying clean, high quality excipients. That is not one of the tests that they're required to do. They do produce a high quality material, unlike the food industry or the baking industry that has the greater potential for contamination.

**Dr. O:** Hopefully then the market place demand will come through and we'll see more and more of this change voluntarily. And companies want to sell more medications with gluten sensitivity.

**Steve:** With the greater use of the manners of testing for gluten in the products that the cost of those tests will come down over time as better tests are developed. You use it more and more often so the raw materials they buy to do their own testing is going to go down too. Everything will come in scale eventually.

I do believe that somewhere along the line if the government doesn't require it there's going to be some voluntary commitment. Just like the food industry started to do before the regulations came out.

**Dr. O:** What kind of process do you see with over the counter medications? Is it as strict in manufacturing? Do they have the same kinds of guidelines or is there a looser set of guidelines there.

**Steve:** There a little looser set of guidelines to that. It's not like you're making a supplement where there is no FDA oversight over supplements. You can make a vitamin B for health and promote it as a health food. The FDA doesn't involved but if you want to produce it as a vitamin supplement then you have to go through a stricter set of guidelines and manufacturing.



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It's not as strict as the manufacturing of prescription pharmaceuticals. If you do investigate some of the manufacturers of these over the counter products you're going to see that a lot of them follow the same guidelines that the prescription manufacturers are doing. I'm not trying to promote anybody but when Paragould came out with their statement a year and a half ago saying that all theirs were gluten free they made a lot of store branded over the counter products like acetaminophen, aspirin and diphenhydramines. The common products that we use every day that you buy at a grocery store chain or a drug store chain.

It's their own brand. A lot of that is Paragould. Paragould will go through an incredibly detailed process to make sure that all their products are gluten free. Other manufacturers of other over the counter products will go to those great lengths also to produce a high quality safe product because they don't want a recall.

If you remember anything about when the Tylenol recall happened because of that person contaminating the Tylenol. They took that very seriously and they looked at all their manufacturing processes and made sure there wasn't any break in any process there that could have caused this contamination. They go to great lengths to ensure a high quality product. The number of hoops they have to jump through aren't the same as through a prescription manufacturer.

**Dr. O:** I want to ask you a little bit about corn. I'll preface it by sharing some of my experience. In my practice when I first started treating and specializing in gluten sensitivity I would have patients go traditionally gluten free.

That is wheat, barley, rye and oat free. The vast majority of them felt much better but would then hit a back slide. That's really what got me investigating some of the other grains. Corn specifically has been studied about 20 times now.

A majority of those studies show corn being detrimental to those with gluten sensitivity for a variety of different reasons. There is some suspicion that there is cross contamination in the study. There is some suspicion that corn gluten has a similar structure as wheat gluten and some of the other glutes. So for many



patients with gluten issues they tend to have this reactivity in just as equal but still measurable to corn.

What in your experience have you seen with corn gluten? If you have any experience there how does that play into the gluten free labeling in manufacturing and pharmacy?

**Steve:**

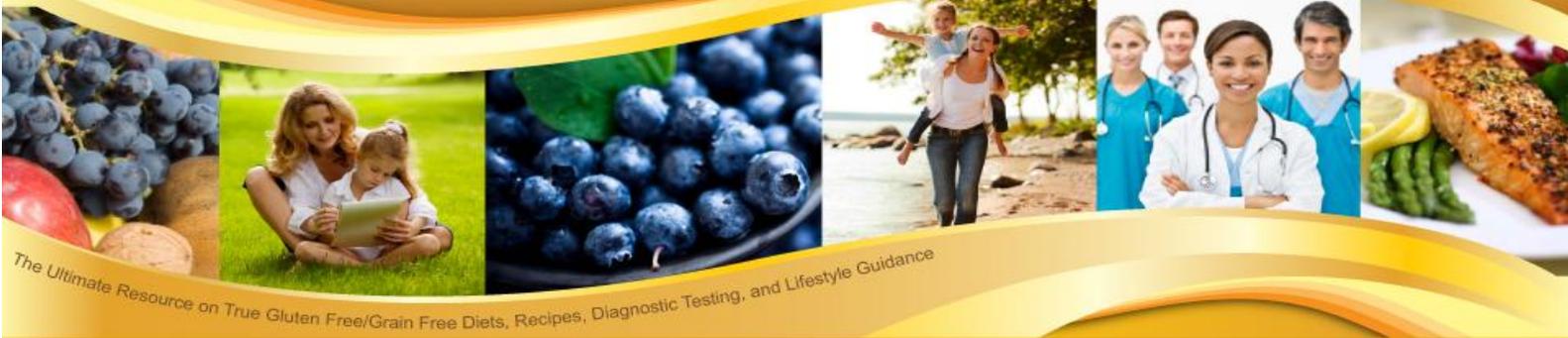
That's a very interesting question. I don't know if you've heard of Dr. Catassi. I believe it was his article in conjunction with Dr. Fasano two well known researchers in Celiac Disease. I think it was their article that I read where they actually took 100% gluten free corn flour. It was 100% guaranteed gluten free in the way it was collected, process and all that.

They still found wheat gluten contamination. The bottom line was that there is no such thing as 100% guaranteed gluten free. There is probably some level of contamination in every gluten free grain and be contaminated with a little bit of wheat. This was specifically corn that they addressed.

I thought that was very interesting. Just like with Dr. Fasano's set the level a minimum of 50mg of gluten was required to set off a gluten reaction. Another part of this sentence said 5mg can do it also. It was interesting.

It takes 50mg but set everybody else to five. Is that due to somebody who is both DQ2 and DQA positive? And they have several generations of positive people in their family? Or is it some other reason?

I don't know but I do have people where corn will be the only ingredient of a starch source and they'll still express that they have some Celiac-like symptoms when we know there's no contamination with wheat. I have seen it but until I read that link that you sent me I wasn't really considering that as part of the negative process. I know that I do have enough that I've dealt with who have said, "Hey Steve can you help me find a gluten free, corn free, lactose free and soy free prescription product?"



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You just shot me in the foot again because that it so difficult. Soy is not in a lot of pharmaceutical excipients but corn is one of the top ingredients in all the excipients out there. They say they have a corn sensitivity in pharmaceuticals. Is it because of a separate allergy?

Or because it's a crossover? I don't know but I do get enough of those people with that kind of request. Then I try to find nothing but synthetically manufactured meds in a particular drug class that they're interested in.

**Dr. O:**

That opens up a can of worms in trying to determine whether or not a medication is going to create a reaction. There was a recent study published just about three months ago. What they did was they took corn gluten itself and analyzed how it reacted with the HOADQ receptor in Celiac patients. The study to me was almost icing on the cake in terms of looking at corn more closely as problematic.

What it found was positive interaction. The positive end result was an inflammatory autoimmune reaction. We have studies that have been done like that as early as 1972. As far as I could find in the medical literature some studies discussing corn as a cause of villous atrophy.

To me that put a whole problematic notion toward the diagnosis of Celiac Disease which is currently classified as you know as having villous atrophy on biopsy. If we have multiple foods that can cause villous atrophy and we're only using the standard of one. Then it could go to say that a person could be doing everything right as far as traditional standards are concerned but not get better or not get the help they need because maybe their villous atrophy was from a different origin.

Maybe their problem came not from wheat, barley or rye but potentially corn and other types of foods. If one food could case it why couldn't another one? We're talking about proteins here. We're talking about biochemical individuality and unique individuals.

**Steve:**

I agree with you 100%. This does give me, no pun intended, food for thought when I'm dealing with some people who are experiencing side effects of a



medication and we've done everything we can to avoid the contact. The other option if a patient is having a problem with their medication if there is a liquid form we've never found any potential source of contamination of a liquid.

Those are always something to consider too. They might have some sugars in them. My most recent charge is trying to talk to people about those polyols and sugar alcohols but other than that aspect the liquid would pretty much get you free of those options with any type of starch in there.

**Dr. O:** Liquid would then be a safer, better option for somebody who is looking for that and having trouble with any of the pill forms?

**Steve:** Yes. Most of the liquids have some stabilizers in there but those are all synthetic and artificial. I've never seen one with corn syrup in there. When they process those sugars those sugars are free of all proteins so there's not a concern of being contaminated with a protein from any gluten source. That's always a positive. Injectables don't have gluten in them.

Even though you have to inject it people are concerned that they're going to the hospital and get an injection that's going to have gluten in it. No injections have gluten in them. No eye drops, no ear drops, no nose or throat sprays have any gluten in them. They're all gluten free.

The liquids would be an option for someone who has taken an oral product. There aren't any heart medicines that have a liquid formulation. The use is limited the organ system that's failing or needs to be addressed by the medication.

**Dr. O:** Interesting. Thanks for sharing that. Where can people get a hold of you if they have questions? What's your website and how can they find more information about what you do and maybe even send you information that find?

**Steve:** [www.glutenfreedrugs.com](http://www.glutenfreedrugs.com). It comes right to my cell phone. At 6:00 this morning I got an e-mail from somebody who wanted to know if a product was gluten free. I just happened to be up.



I happened to know that product and was able to get back to them in a relatively short period of time. They can do that. If I can answer the question I'll answer right away. If I have to do some more research I'll let them know.

I'll do the research I need. If they have other questions in general they can send me an e-mail. A number of times I've been asked to help them pick a blood pressure medicine. Their physician wants to start them on a blood pressure medicine and through communication with their physician I talk to the office.

I find out if they're looking for a drug class like beta blockers or channel blockers. I can give them a list of drugs in each one of those classes that are considered safe. It gives the physician the opportunity to select his/her favorites. Insurance companies tell you what to do. You don't need what your patients telling you what to do too.

It's always tough but I don't want to take away the physicians right to pick the drugs they really like to work with. I'll give them a list of drugs in the class they might be comfortable with and let them pick and choose from those classes. If that's not good enough we'll just go on until we find what we need to do to satisfy both the patient and the physician, dentist or whoever else is being treated.

**Dr. O:** Thanks so much for taking the time out of your day to talk with us and give us a resource of great information for people to go and visit and get help from. That's [glutenfreedrugs.com](http://glutenfreedrugs.com)?

**Steve:** That's correct.

**Dr. O:** They can get a hold of you. Do you have an app coming out any time soon?

**Steve:** I wish. I actually wrote my first website out by hand. I wrote my own HTML code. I'm not really a highly technical person.

I can use my iPhone but I don't know much more about an app like that. That's a tough one. I try to keep that website as vanilla and generic as I possibly can so people can look at it. I'm updating it right now.



I'm going through everything and trying to stratify these drugs into different classes because the drug companies are providing some interesting answers. I'm trying to tell you if this is gluten free or the chances of gluten free is almost zero. There are few ways that the drug companies are answering. "We can't guarantee it gluten free however we don't use any gluten in the manufacturing of any of our products."

I'm trying to update that a little bit but to make an app out of it that's a little beyond me. A lot of my clients will just print out the list and take it to their doctor's office and let him/her pick from the list. That has worked out okay.

**Dr. O:** That works too. Sometimes when technology fails us we can always use a pen and paper.

**Steve:** I just want to tell you one more thing for your audience and or yourself. When you're making a call to the manufacturer if they give you an answer that's very generic like, "We don't use any gluten in the manufacturing of our product however we can't guarantee that somehow it can get accidentally contaminated." That's a pretty good answer.

What you really have to look for now is that some of the drug companies are giving false information. False information to the detriment of their own product. They will tell you that something contains gluten and at that point a lot of people will just say, "Okay thank you." They hang up and they actually step away from a drug that is probably the best drug for them at that time.

What's happening is there is a class of drugs generically called "sugar alcohols" that's your manitol, malitol, xylitol. There are the ones that are artificial sweeteners for diabetes. They could have actually come from a wheat source in the very beginning.

They are manufactured, synthesized, produced, washed and cleaned. They come out pure sugar. That pure sugar does not contain any gluten code. We have one manufacturer specifically who is telling the consumer that it contains



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gluten when in fact it contains a polyol that has been shown to be 100% gluten free.

That is causing some of the problems that I wish some of the companies weren't doing. They're making it more difficult for your patient so you really have to ask what is the actual source of contamination of their product. If it happens to be one of those polyols that they mention the gluten is coming from then you just ignore that and be sure that's gluten free.

That's my latest charge. Trying to get this information out to the public. Until recently I've never had a company do this and now I have a couple of companies who are giving false information to the customer and making it much more difficult for them. That's something to be aware of. I want to make sure people understand that there are some things that are considered contaminated by gluten by the company that are actually gluten free.

**Dr. O:** The polyol themselves are completely devoid of any type of protein. Even if their original source was corn or some other form of grain?

**Steve:** That is correct.

**Dr. O:** Here's what I see. A lot of my patients react to those and it might not be a gluten reaction so to speak. Often times the sugar alcohols can cause digestive distress or be harder for bacteria to break down in the gut. If they're already gluten sensitive with a lot of damage to their gut they just may have a harder time tolerating that but it's not because of gluten.

**Steve:** That is very much so. Take a look at Advil Gel Caps and you'll see what I'm talking about. The label specifically says, "Contains gluten." When I called the company that's not exactly what they told me.

It was an interesting conversation I had with that company. That's what's happening in the marketplace right now. Just be aware. Too much of any of those sugar alcohols can definitely cause intestinal distress.



**Dr. O:** Good delineation. Thanks for sharing that. It's been great talking with you. Again, that's [glutenfreedrugs.com](http://glutenfreedrugs.com) as far as the website is concerned where people can go and get more information. Again, thanks so much for taking the time out of your busy schedule to be with us.

I know your time is very valuable so I always appreciate it if you can make that available. I'd like to get with you in the future and talk some more as the whole process of defining gluten free and labeling laws around gluten free change. I think update would be a great thing for the listeners.

**Steve:** Absolutely. I'd be glad to do it any time.

**Dr. O:** Thanks so much again. You have a wonderful Christmas.

**Steve:** Thank you Dr. Osborne.

**Dr. O:** Thank you.