P5 Protocols - Dr Kris Smith.mp3

After hearing Kris Smith speak, I immediately felt I had to have him on our podcast series. He is a leading brain cancer surgeon and more recent proponent of the ketogenic diet, something institutions like Johns Hopkins started patients on almost 60 years ago but something that somehow has not caught on. Dr. Smith is interesting in that he has not backed away from surgery, though I openly acknowledge he is, in fact, a surgeon. But there is a N of 1 consistency between his comments on good surgery increasing survival and the story of Alison Gannett who a few weeks back was on this podcast. She is almost six years past surgery with no other standard of care intervention. I am trying to get a copy of his presentation that he gave at a recent conference and when I have that, I will add it at the end of the transcript in the show notes section. Don't forget to visit us at www.p5hv.com or www.p5protocols.com or email us at protocols@p5hv.com to sign up for our newsletter. I won't waste any more of your time, so here is Kris Smith…

[00:01:31] (DE) A few months back I went to a tripping over the truth conference and the first lecture that I sat in on was from someone who I had not known, by the name of Dr Kris Smith, who is a neurosurgeon out West and I was blown away by his story. So with that, I'm going to welcome Dr Kris Smith.

[00:01:59] (KS Thank you, it's a pleasure to be here.

[00:02:01] (DE) So what I would love to do is instead of me doing a long intro, is to have you tell your background and what medicine you practice and how you got there and then we can dive deeper.

[00:02:13] (KS) Great. Well I am a practicing neurosurgeon at the Barrow Neurologic Institute in Phoenix, Arizona. It has the distinction of being the busiest neurosurgical center in the country. We are listed in U.S. News World Report as performing the most brain surgeries of any center, and I'm a part of that and proud of it. I did my residency training here, but have been practicing over 21, coming up on 22 years, after residency so I've done over 10,000 surgeries and I've operated on many patients. My ***subspecialty is brain tumors and the treatment of medically refractory epilepsy***. I did some ***fellowships at University of Pittsburgh and the Cleveland Clinic and also the Karolinska Institute in Stockholm***. I learned how to do the Gammon knife and, as part of a background of treating patients with brain tumors, both primary brain tumors and metastatic brain tumors - tumors that come from lung cancer, breast cancer melanoma and spread to the brain as the ***use of the gamma knife, which is a very focused, non-invasive tool that really revolutionized neurosurgery more than 20 years ago to allow us to have a less invasive, almost non-invasive option to treat intracranial pathology***.

So I learned about that and I became ***very interested, very driven to use less invasive techniques for patients with brain tumors and on our surgical problems***. And one of the things that when I was in my training it was the focus was really on maximal resection, maximally invasive things, and we did all kinds of things with my great mentor and Chairman Dr. Robert Spetzler, renowned as one of the greatest neurosurgeons, ever on the planet. And at that time in the late 90s and such, we developed these massive skull-based approaches and combined approaches and just really opened up half of patients head and exposed everything to see. But at the same time, there was ***this image guidance technique that was being developed that allowed us to see things before we made the opening and I really latched onto that and prided myself to still be able to do aggressive surgery, but through the smallest little keyhole openings possible and really limited the collateral damage and pain and all that stuff and it really combined with this use of the gamma knife.***

And you know everything changes in medicine, and ***in my field with this image guidance system and non-invasive techniques like the gamma knife, the world just flipped 180 degrees and allowing patients to have complete and aggressive treatment, but without all of the collateral damage of exposure***. So I pride myself in being kind of a big part of that push. And then though ***my world turned upside down about 12 to 14 years ago, when my own father was diagnosed with glioblastoma***. And I'd already written a research protocol for use of a new

technique of combining Gamma Knife surgery on top of standard therapy. And these little glial wafers are impregnated wafers of chemotherapy to the treatment of glioblastoma and I actually had him flown down here and enrolled him in the trial and treated him and then he did better than average. He lived for 19 months after his diagnosis and at that time the average survival is right at a year, so nearly double.

But unfortunately, he passed away and the whole time he lived with me, my mother and my father lived with me, in my home here in Phoenix and I watched him every day and I learned painfully more from that experience than from any other patient or any other experience, as you might imagine. Watching him every day and seeing the cumulative kind of side effects of therapy, and it really touched me, not immediately, but a few years later that ***he really didn't die of his of his tumor, it clearly was the instigator. He may have died of it anyway without the treatment, but he really died ultimately of the complications of the toxicity of the therapy and that really left a lasting impression on me.*** I looked for side effects of treatment in multiple other patients that were in that same protocol, and I will say that there is one patient is still alive and well who is in that protocol and she runs with me in this D'Backs Race Against Cancer that I do every year. She is now coming up on she's 13 and a half years out, has no evidence of tumor and she runs with me every year in this race and she's watched her little boy grow from 3 to 16 and now become a troublesome teenager and that's a great thing that I look back on so. So it really shows that enrollment in a clinical trial can be helpful and really do good some things.

But we have to learn what did we gain from the experience and ***I gained two things - one was there was a real need for a very good surgical resection and aggressive treatment of the tumor, but at the same time limiting the toxicity that patients get***. Everyone else, all the other 29 patients out of the 30 in that trial died, including my father, and ***many of them had radiation toxicity and all kinds of things***, so I've really looked at how do we get the result of the one patient who survived it doing very well, what was different about her and what did we learn from how to avoid toxicity of treatment. And so I've thought about that question over and over over again and I see it everyday in my clinical practice and then follow up and I really, David, interrupt me if I'm going too long, but ***I became enamored with the with the ketogenic diet, honestly through the influence of my wife***.

My wife, we've been married for coming up 35 years so we've been together since we were teenagers and when I was in medical school, she was a medical dietician at the hospital I worked. Well when we're raising our children she stopped working but she maintains continuing medical education and she takes all these nutrition classes and courses and we almost laugh because everything that she learned in college and the standard American Dietetic Association thing is it's almost embarrassing now in the light of what's been learned about the ketogenic diet is that this low fat diet, this you know ***protecting against lipids and cholesterol, everything was the worst pile of garbage that ever got pushed on the American public***. ***It's absolutely unhealthy, it's the cause of more obesity and type 2 diabetes and Alzheimer's disease and all this stuff. But I didn't know this was, I was standard you know medical education, MD degree. And I knew none of this stuff about nutrition, but thank goodness that my wife is taking these classes. And I would sit with her and listen either obligatorily or I had to or she was taking them at night at dinner and I started listening***. And I said is this really true...People that were showing evidence about the ketogenic diet, I started really looking at the science and reading it really piqued my interest.

And then ***there's a resident here at our hospital who's one of our chief residents, he's a big advocate for ketogenic for athletic performance***. I like to run, in fact I'm training right now, I'm doing a marathon in Sedona just a week from Saturday. And I started getting interested about doing it for athletic performance and then I have three different groups of patients in my practice that need the ketogenic diet or can benefit from it. Number one is people with medical refractory epilepsy. Turns out if you're on the ketogenic diet that can be more powerful than taking an anti (?) drug and controlling seizures. So that was already part of a practice that's been well known for over 20 years, it's a standard treatment for medical refractor Pediatric Epilepsy. The number two is I have patients with pseudotumor cerebri which really is a disease of obese young women. And turns out if you"re

carbohydrate intolerant and you have that unfortunate genetic makeup and you weigh 300 or 400 pounds and that weight gets added to your chest that turns out you can't absorb your spinal fluid correctly into the high pressure of the veins and you end up with this terribly swollen brain and headaches and blindness and you need to come to a neurosurgeon to get a shot.

So I have a whole practice of these patients as well and it's very very challenging group of patients to treat because they're just miserable and many of them have had gastric stapling, they've been in every diet yoyo you could imagine and we learned about the ketogenic diet and have several of them now on it and they're losing weight and they can actually be cured or become shunt independent. I can take out their shunts and we're actually doing that as a formal study so that's number two. Number three patient is the patients with brain tumors. This is when I really got excited, ***when I found out that that really the glioblastoma the brain cancer cells use four to five times as much glucose standard cells and they really can't be adapted to using ketones. And again I'm like a lot of doctors, I thought the brain absolutely had to have glucose as fuel and when I heard this was one of these podcasts about the brain being able to use ketones and said I said no it's B.S.. And I looked it up and said, man, they're right. You can use ketones and it turns out now that I've been on the ketogenic dite myself for about nine months, I recognize the great advantages of being in nutritional ketosis. You feel sharp, your memory is better, your moods better, you have energy to burn /spare, you don't become tired in your afternoon after eating. And it's just amazingly beneficial for people. I was prescribing it to all these groups of patients and I decided I needed to do it myself.*** And I'm so glad that I did. I am gaining this whole experience and now that I have patients with brain tumors who are being treated in a study and this ketogenic study... a little backtrack here... there was a very influential researcher here, ***Dr. Adrian Sheck, as she's been nationally known for being aware of the ketogenic diet. She's worked here for many years and I used to really just be one of those typical doctors saying, oh what can a diet do for treating cancer and really gave it no credence whatsoever. And I'm the number one enroller in the study and I'm putting every patient on I can think of because this process of the Warburg effect. So again the cancer cells are using four to five times as much glucose and are absolutely dependent on glucose for survival, whereas normal brain cells not only function well, but they flourish and do better on ketones***. And the idea's with this metabolic treatment if you're really in a state of continuous nutritional ketosis, you're trying to starve the cancer cells and have them die off and let the regular bleed brain flourish. And so now in my practice, I have many many patients actively treating their brain tumor on a ketogenic diet and I've really found and this is still unpublished, we're just gaining experience and gaining patients. But they are the ones who are really adhering to the ketogenic diet, you have the exact same kind of story that I gave you know personally - it's that they have increased energy, better brain function and it appears that they're having decreased inflammation in their brain, decreased swelling and they're just really doing well and I'm very excited about this as a treatment option.

[00:14:00] (DE) How long do you have patients on the ketogenic diet at this point?

[00:14:08] (KS) Well because of Dr. Adrienne Scheck, we had a few patients that were doing it a while back, as long as four or five years ago. Again, at that time I didn't really pay that much attention to it. I think the longest I've had a patient really on it is about two years, patients doing great. I don't restrict it to just high grade gliomas. I think it's a preventative mechanism for patients with low grade gliomas. And those are astrocytoma and oligodendroglioma or a grade 2 and 3 are grade 2 primarily for low grade. And the problem is essentially all those tumors historically eventually convert/progress into a high grade glioma. ***So we have several patients with that disease on it and the longest one that I've personally been following has been a couple of years and so far he's just doing great, he's had no other therapies - only surgical resection no radiation no chemotherapy and just doing the ketogenic diet religiously. And so far his scans look stable***. And the other doctors out there will know that that could also just be his natural course and has nothing to do with the diet, but we have to gain more and more experience and more data. Ideally, it would take a randomised controlled trial but I just don't know that we'll ever get enough patients to really do that properly. So ***at this point I'm just basically rolling everybody on it that'll do it and kind of self randomising some people just for whatever reason, family support or lack of it, just are not going on it will we'll have kind of a natural comparative group.***

[00:15:40] (DE) So let's I'd love to go back and talk about your non-invasive surgical procedures as well because it's also the lack of information and risk of infection...all those other things and lack of trauma, obviously, by pushing around or shoving around or cutting around tissue less, so I'd love to understand you know - someone comes to you with a glioblastoma - what are the different ways that you treat them? I know everyone may be a little different, but maybe talk about some of the nuance of how you make decisions and what you typically do.

[00:16:23] (KS) Well at that the start, I still remain an absolute advocate for maximum surgical resection. That doesn't mean maximal surgical opening, it means minimal invasive opening, but maximal resection there's actually unquestionable data that supports that if if you start out with the only (indistinguishable) at the center of a tumor you leave this advancing edge going on if it does continue to progress and I don't yet quite have enough faith in any therapy that that doesn't involve starting out with as much of a clean slate as you can, as these glioblastomas cells are just horrible actors, they secrete cytokines, hormones that cloak them from your immune system and they cause edema swelling and symptoms and all this stuff and every single study has shown that if you can start out with a clean slate with getting the visible tumor out on an MRI scan and then start your therapies, they have a much better chance of beating it and I've never had a long term survivor who didn't have the best possible surgical resection first.

But, so the way I do it, yesterday I operated on this poor lady (I can't give too much detail but she's had seven children in her 40s) and has a recurrent tumor and a terrible place with progressive weakness and language difficulty. And we just needed to get to (?). But I did it through a little opening the size of a quarter and did it all with image guidance, and use of this functional MRI integration into the image guidance system under the microscopes you know where we can't go and how to protect things and do it with this little tiny keyhole maneuver and I use a little disposable retractor that allows me to kind of focus it and move it around in a keyhole fashion where you look through - imagine looking at a door through a keyhole and you see the whole room when you get close enough and you can angle your view and that's the same way I take out tumors through a little tiny opening, but I angle my view all with this computer image guidance system that allows me to know where I am at all times and in 3-D on the computer that's right there and registered to the patient so you can still do a very good resection and an opening with this little opening to this keyhole approach and then we're very interested in another technique of using a type of radiation treatment that's very focused and last one called brachytherapy seeds and that's new and we're the only center doing this study. There's been many attempts at this in the past, we think we have a better mousetrap that we've designed to have them in these little tiles of gel foam that gives enough space. You're not putting the seeds directly in the brain like you do in a prostate it turns out obviously the brain is a little different than the prostate as it can't tolerate seeds directly in the substance of the brain. But giving this delivery system allows a very high dose of focal radiation right where it's needed and then that very little beyond the edges we want to penetrate about a centimeter, but past that we're causing radiation toxicity so I really like this technique of doing it without that. And then I think that the ketogenic diet on top of that makes great sense because it has an amazing anti-inflammatory effect. And the patients that are on it really are not having the same degree of inflammation and swelling and all that that the patients who are not on the diet have, so I'm really thinking that this allows us to aggressively treat the tumor but not have the collateral damage of the treatment. And so I think the anti-inflammatory effect to the ketogenic diet is very appealing.

[00:20:02] (DE) Have you had anyone discuss or have you looked at CBD or THCA as additional anti-inflammatories?

[00:20:11] (KS) You know I have had it discussed, I've been to many lectures on CBD oil and we have some chronic pain patients and that type of thing that are on it. And I would consider myself a non expert in that I just have been exposed to it, but I really am not knowledgeable enough to know about its anti-inflammatory effects yet.

[00:20:36] (DE) I actually had knee surgery three years ago and while I wasn't keto, I was grain free, legume free, meat free- certainly anything that wasn't grass fed - and I was very careful and then I

had a full patellar transplant and I used the cryo, or the ice cuff, and some other therapy, but I was running on a beach in ten weeks at 46 years of age. And I used THCA, which really helps my body type better than CBD, but I was at my surgeon's and the rehab guys go, "we don't have teenagers that heal that fast." And I'm convinced that was how. The other thing is Steve Gundry who is on the show, I don't know if you've ever come across him?

[00:21:30] (KS) Absolutely, no, we are big fans, he's The Plant Paradox.

[00:21:33] (DE) Yes, yes he is. You know that for me when I have lectins now that I've really cleaned out my diet, which I started about two years ago. If I introduce them I wind up with inflammation in various joints that feels almost arthritic and then it goes away a couple of days later.

[00:21:53] (KS) I'm very much impressed with the anti-inflammatory effects the ketogenic diet in this plant paradox idea and lectins. Some of the patients who have this pseudotumor condition are they're very morbidly obese and usually it runs in families, so typically a patient, a young woman will come in with her mother, the mother's usually in her 40s or 50s and is also very obese. They have the same genetics and they usually have conditions like fibromyalgia, these chronic pain, chronic headaches and things and they're just miserable and not enjoying life at all and then I convince them to go on the diet as a family and have each other support and you know help them do it. And literally a month after initiating one of these patients on the diet, I saw them at follow up in the hospital and she came up to me in tears and gives me this big hug and says, "you have no idea how you've changed our lives. I can now play with my grandchildren for hours and not feel sore the next day and not have to be on medications." It's just the Fibromyalgia has just gone on the ketogenic diet so I'm very much enamored that.

[00:22:57] (DE) How long have you been using some of these different procedures including minimally invasive surgery and what's happened to your patients side effects and length of survival?

[00:23:12] (KS) Well it's interesting, I think, you know, I've been doing this for really almost my entire career, trying to develop and perfect it, using less invasive approaches and it was interesting we have the largest neurosurgery training program in the country. And then we have other surgeons who also treat patients the glioblastoma, I'm not the only one. And one of the residents a few years ago kind of looked up data and was trying to get all of the numbers and looks up you know side effects and toxicity and the survival curves and all this stuff and all of her patients. And in the context of our weekly - every Friday we have grand rounds and the topic came up you know of all the data they said I just curiously asked, "Is there, you have it coded, you know who their doctor was, you know who this surgeon was who treated them and did it make a difference or are we all the same?" And he goes, "Well I wasn't going to talk about this, I didn't want to step any toes, but in all honesty, ***Dr. Smith, your patients live a lot longer than anybody elses and they have less toxicity and less, you know, morbidity. We have a monthly MNM conference, called Morbidity and Mortality conference, where you have to talk about the complications***. And I teach this at National Means, I think the smaller the approach by teaching is that any brain that's not exposed is likely to be uninjured or if you do these larger openings that everything's at risk - larger risk of infection, larger risk of a stroke, larger risk vascular damage of trauma of something accidentally falling on the brain that's open to the air. That's why I just don't expose any of that. I just do the absolute minimum to get the tumor out. And I think that data are really bored out that there is a difference, a clinically significant difference, in survival and morbidity.

[00:25:04] (DE) And what about recovery rates, they obviously must be a lot faster?

[00:25:27] (KS) Yes absolutely. I never shave anyone's head. They're, you know, small little, quarter size openings and very little downtime. I Just had a lady today in my follow up clinic, I operated on her last week and she's out running three miles a day already and this is just 10 days out of surgery.

[00:25:27] (DE) And do you recommend any fasting for surgery?

[00:25:031] (KS) No. I mean everybody is after midnight, so technically everybody's fasting for the

eight hours or 12 hours before their surgery. But it's not something that I've really went by and I recognize the ability to induce ketosis. One of the problems with neurosurgery, and this may only be appealing to those who are directly in the field, but their use of corticosteroids. So dexamethasone is kind of a standard corticosteroid that's used after surgery to decrease inflammation, a very powerful antiinflammatory. The trouble with it is is as you know corticosteroids are stress hormones and they absolutely make your blood sugar go straight up you can't be in ketosis when you have corticosteroids onboard and you then you really decrease wound healing and decrease the immune response...all this stuff and there have been some recent studies looking at that and patients who are chronically on high dose corticosteroids for their tumor do much worse - it blocks their immune system. And so I think the ketogenic diet and going into nutritional ketosis ahead of surgery could potentially avoid the need for post op corticosteroids completely. And I think that's a very exciting topic.

[00:26:68] (DE) So when do you start that with your patients.

[00:26:51] (KS) Yeah exactly, just thinking about it right now. Yeah, we're going to look at that specifically. I've already always tried to really decrease corticosteroid use in my patients and sometimes it really is the best way to have them not have post-operative headaches and vomiting so it's a useful drug. But it's you know most a dark side to every good side. And I think there is if there's another way to do that and it's ketogenic diet that's great and I have to give props to my hospital there's a nurse practitioner who is just now, we talked about today, ***in the hospital system and dietetics as well, to be able to order a ketogenic on the hospital menu because everything hospital gives you is terrible. You know, I walk around and see the food that people eat and it's just awful. And I see all the vending machines with Cokes and Cokes and I just think it's awful that you go to the hospital trying to get well and there's nothing but garbage to eat. So we're trying to change that.***

[00:27:48] (DE) Yeah. I can't even go there based on certain relatives and people and what I've seen when I'm there. I even saw one of the big New York hospitals they brought in a very smart and capable, advanced thinking registered dietitian who was paid to revamp the entire menu including on their concierge floor and it was all done and then they just decided they weren't going to do it.

[00:28:17] (KS) Wow. Yeah that's awful.

[00:28:20] (DE) And then a year later, someone I was close with was on that concierge floor and I saw the menu. And I just never saw anything worse in my life. It's staggering in this day and age. What else what else can you tell us about about your practice and humanity? Do you publish survival rates and what I would call, not lifespan, but health span?

[00:28:49] Absolutely. There's a thing called the overall survival progression, free survival and then their **quality of life** indices and very specifically, disease-specific quality of life indices. And I have given many talks at local, national, international meetings and one of the things I've really tried to push is when you only look at overall survival, but you don't have any index of the quality of that time of life. And that's what really changed again with my father's story. And I recognize that if you only look at the one number the overall survival you can be completely misled. And whenever I give a talk, there's a standard group of patient's experiences that I typically give and one of them is this poor lady. I see her every few months for a surveillance MRI and she's about six or seven years out now from her treatment and that included a follow up laser ablation. So there's this new very minimally invasive technique called interstitial laser ablation therapy that's completely minimally invasive it's only done through a little twister's hole a couple of millimeters wide you can place a laser probe inside the MRI scanner you can ablate tissue from the inside out and I've been one of the first adopters of that technology and treated hundreds of patients with that and I use it for some very deep seeded and difficult to resect or non-resect glioblastomas that were on a study to use that as the primary treatment in it; and a side note, it may actually induce an internal vaccine type effect and several of us, including people at the Cleveland Clinic and Washington University, St. Louis are doing this as a study. But anyway, she found that ***she had only post radiation treatment effective radiation across literally that brain from the treatment. It did cure her tumor. She's never had***

a recurrence or worse, almost seven years now. And about five years ago I did the biopsy and the laser ablation that documented that it was just post radiation treatment effect. So again, she's never had a recurrence of a tumor, but when she sees me she's brought in by her dear and loving husband who takes care of her 24/7, and she's in a stretcher. She can barely talk, maybe says a few words. She's been dragged to a couple of Ohio State football games - she's a fan and she smiles if I ever say the name. She can't really talk and she has absolutely no quality of life and it's just awful. I feel so bad for her that, yes, we succeeded in treating her tumor. ***From an overall survival standpoint, she's a win, but on a quality of life standpoint, she's an absolute 10 plus loss and and I really think that that's what we need to focus on - not just extending life, but extending quality of life in the time that you have on Earth if it's there is going to be something that you want it to be and not just wishing that you were dead. So it's a real problem now studying the absolute brain specific quality of life indices along with survival.***

[00:31:58] (DE) What I'm going to do is because people listening to podcasts have limited capacity for staying with any one podcast too long I even found myself over the last six to 12 months that the longer the podcast get the tougher to listen through. And so I find myself gravitating to the ones with more notes where I can follow up. So what I would love to do is a) stay in touch, which I will, because I'll be following your work regardless, because I absolutely love what you're doing with the mixing and matching the best of the really old right, which is Hippocrates, or even Jesus, putting people on these diets, you know low calorie. And then adding, and it's more sensitive issue, maybe with some certain patients with brain tumors of walking and exercise and using any tool you can to get every edge you can get. But any material I will be happy to post along with the show notes, if I can, I would love to take one of your presentations and put that up there for anyone who wants to learn. And I will make it the resource page, your page on our website, as well as I'll redirect it back to you so that people can do their research.

[00:33:24] (KS) That's great. Thank you.

[00:33:26] (DE) But this was a great first introduction I think for the audience. And your presentation, which I've not been able to get a copy that I saw, to post or, even for that matter, watch again. But just outstanding and your relationship with your dad and what you saw and how you came to really not just think this way, but act more aggressively is just fantastic. I really appreciate you taking the time.

[00:34:00] (KS) Thank you. I really appreciate the opportunity to share my experience.

[00:34:04] (DE) Wonderful. Thank you.

[00:34:05] (KS) Absolutely. My pleasure.

I cannot thank Dr. Smith enough for being on this show. We first were to record this over a month ago but had a technical problem. He has been so busy that our first available date was in fact this week. As I said at the beginning, I will try to find more information for our listeners and will continue to post it in the show notes listed immediately below. Thank you for listening to P5 Protocols. Don't forget to go to www.p5protocols.com and sign up for our newsletter which links to this podcast, or subscribe to us on SoundCloud or in the iTunes store. Thank you for listening to P5 Protocols.

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