

Legal Defense By Showing Brain Image Response To Red 40 Food Coloring

(Obtain enough data to convince a judge to call for retrial for inmate NE)

To: The Virginia Department of Corrections Human Subject Research Review Committee, Dave Wiskman, chair, hsrrc@vadoc.virginia.gov

From: Dr. Edward H. Takken, PhD, July 1, 2022

Medical Objective: Demonstrate that the brain response of inmate NE to Red 40 artificial food coloring is abnormal in centers for aggression and judgment control. His crime at age 17 was choking his girlfriend to death in an outburst of rage.

Legal Objective: Obtain enough data to convince a judge to call for retrial of NE on the grounds of temporary insanity, and in particular, show that the Court-ordered psychiatric evaluation of NE used in his initial trial is probably irrelevant. That exam was done under different conditions than what applied at the time of the crime. It was done after many artificial ingredients had been removed from what NE was eating.

Medical vs. Legal: The EU and China have removed artificial colorings from foods. But in the US the prevailing medical opinion is that artificial ingredients are not related to hyperactivity-class conditions, and that evidence attempting to support restricted diets is flawed by placebo. The SPECT/PET measure of response proposed here is inherently placebo free, and the objective is to convince a judge, not the US medical community.

Protocol: Use challenge SPECT or PET brain imagery to evaluate the response of NE to food coloring, and compare his response to that of a normal individual. An important first step is to avoid artificial additives for several days. Then take a series of brain images over about 30 min with challenge ingested immediately after the first image. McCormick brand Red 40 will be used for the challenge. Reaction times are expected to be ≤ 5 min for initial onset and some 10-15 min for full response. A newspaper reporter once said of his kids, "Give 'em M&M's and they're taking the wallpaper off before you can get out the door."

Basis for Expectation: Analysis of the edibles NE was ingesting before his crime suggest that he was getting some 2-4 cc = 40-80 drops of Red 40 from Hawaiian Punch alone. That's 4-8 times the government-recommended limit, plus there was more of both Red 40 and several other additives from Fruit Loops and other snacks.

Previous Brain Imagery: The challenge protocol has not been used before, but there has been a cross-over study using EEG imagery for a group of ADHD children when on a restricted diet or not. Interpolation of Uhlig1997 implies the following for a challenge study:

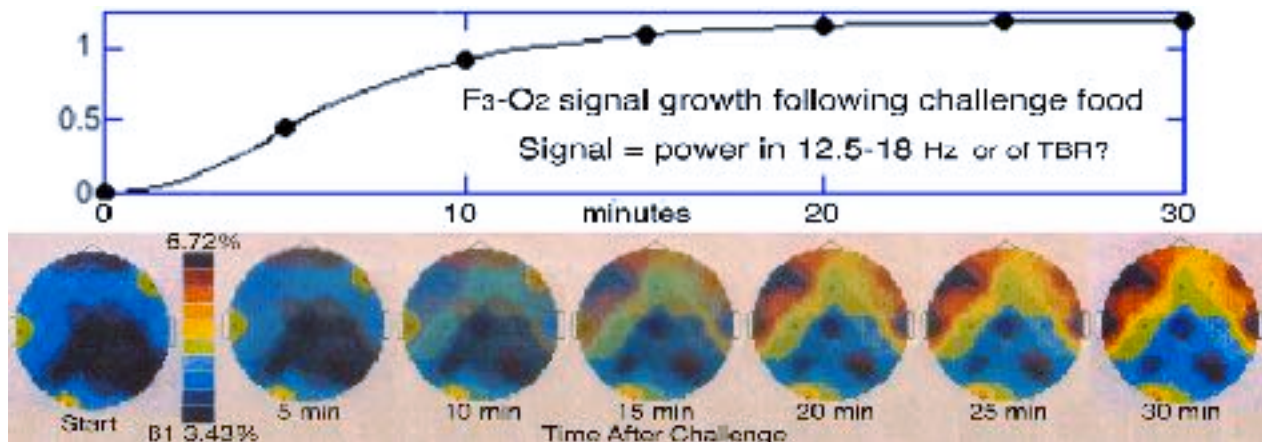


Figure 1: Anticipated EEG Response To Artificial Food Challenge For Some ADHD-Class Patients. The first and last images, and the first and last points of the graph, are numbers measured in Uhlig1997. The middle images are interpolation using Photoshop. F₃ and O₂ are EEG electrodes. ADHD behavior was observed to be in association with the right-hand image during uncontrolled diet

The next most relevant brain imagery for this proposal is a well-known Raine1998 study using metabolic PET to evaluate 38 convicted murderers. Background checks established that 12 had suffered significant abuse or depravation while 26 were from benign or supportive backgrounds. PET scans confirmed this division, but with a surprise. The 12 from abusive backgrounds had normal brain metabolism. It was the 26 from benign backgrounds that were different. They averaged 5.7 % less metabolic activity in the medial prefrontal cortex and 14.2 % less in the right orbitofrontal cortex. These are thought-judgment-conscience regions that normally control impulses from the primitive limbic system but in the benign-background criminals are apparently suppressed to the point of not being unable to do so. Raine1998 assumed this abnormal brain metabolism to be a fixed anomaly with criminality defined by innate brain state. And in general, American psychiatry has held to the position for 50 years now, that ADHD class conditions are fixed, hard-wired brain anomalies.

Rationale For This Proposal and What Challenge: Raine publications including the 1998 work and later books do not reference Uhlig1997 and seem to be unaware of the variability finding reported there. EEG is less quantitative, but the cross-over study by Uhlig et al. did show that brain activity can be causally variable. The pre-frontal cortex was most affected by ingredients in foods, and the change was associated with increase in hyperactivity.

But Uhlig1997 has been referenced only twice in the medical literature—in a listing and with just a comment that placebo control was inadequate. The critique here of that critique is that it's totally backwards and missing a foundation fundamental about how to establish truth. Brain imagery should be placebo free.

Fifty years of ADHD research has been based on double-blind placebo control with observed behavior the measure of effect, and with disguise of challenge substance so limiting as to almost assure false negative outcome. Brain imaging offers a measure that is objective. It is independent of whether the test subject or experimenters know what substances are being ingested or whether a challenge is being administered, and the amount of challenge substance does not have to be limited.

The challenge substance and the quantity to be used in the test proposed here is specifically the leading possibly problematic ingredient in the food/drink NE was getting in the day before his fatal outburst—about 40-80 drops of Red 40 food coloring. Final decision on the amount to be used will be based on better understanding what he meant by “a cup of” in his initial correspondence, and hopefully by him being allowed to do self-testing a few times.

Control Volunteer: In addition to showing brain metabolic response to food coloring by NE, it would be best to also show that this does not happen in normal individuals. So the SPECT/PET equipment is being scheduled to take four head images in succession—NE, V, NE, V. I could be the volunteer, but I might not be a very good “normal.” I have extensive chemical sensitivities and find perk from Coke to be stronger than from an exact same amount of caffeine. Control testing may have to be dropped from this study if no medical facility will offer a reasonable price for performing PET or SPECT, but currently I am looking for a better “normal” volunteer than myself.

Brain Imaging Technique and Choice Of Facility: PET and SPECT should be truly objective, but both are slow using about 30 min to take one 3D image. PET gives better and more standardized detail than than SPECT but may be too expensive. The image-taking rate of EEG would be ideal for capturing the brain response transition anticipated here, images taking < 5 min and in succession, but they are 2D pseudo images, and EEG is only partly objective. Personally I think it's OK the way Uhlig1997 did it with extensive data averaging, artifact screening and patient setting control. And they were able to claim consistent EEG image results when comparing 15 patients. But there seem to be no EEG facilities familiar with the data processing and controls of Uhlig1997, so I'm considering using EEG only as a secondary simultaneous measurement technique.

Request for price quotes have been sent to the three PET-capable facilities near Virginia Wallens Ridge State Prison.

Medical Center	adress	distance	PET	SPECT	EEG	fMRI	SPECT+EEG
Lonesome Pine Hosp 276-523-3111	1990 Holton Ave E Big Stone Gap, VA 24219	12 mi	N	N	N	N	N
Norton Com Hosp 276-439-1000, Rad-1333	100 5 th St NW Norton, VA 24273	17 mi	N	N	N	N	N
Cancer Center 276-679-5874	671 Hwy 58 E Norton, VA 24273	17 mi	PET only	N	N	N	N
Holston Valley Med Ctr 423-224-4000, EEG-5190, PET/SPECT/Rad-6815	130 W Ravine Rd Kingsport, TN 37660	52 mi	PET +CT	dual head	Y	N	?
Johnson City Med Ctr 423-431-6111, Rad-6761, EEG-6700 Doris	400 N State of Franklin Rd Junction City, TN 37604	65 mi	PET +CT	dual head	Y	?	?

Schedule:

Test	Locatio n	#, Duration	Objective	Start	Report
1: Preliminary Self Evaluation: NE records when and what he thinks he feels after ingesting Red 40 food coloring.* This is done on four separate occasions for different amounts of Red 40 coloring.	In inmate's cell at Wallens Ridge	4 self tests. 5 days in between, so minimum of 16 days	Two decisions A: Proceed or not B: Plan amount of Red 40 to be used	when proposal approved	3 weeks after start
2: Two SPECT or PET images taken Ingest Red 40 immediately after 1 st Wait 20-30 min before starting 2 nd . A series of EEG images may be taken during the wait period. Do this both for NE and for a normal control subject.	At a medical center near Wallens Ridge	One test session. Requires a half day trip to a medical facility	Determine whether Red 40 suppresses prefrontal judgement control areas of the brain of inmate NE	Oct 6-12 preferred. Time to schedule faciliity is about three weeks	1 mo for report to VDOC. Months for retrial petition to Judge.

*NE has already written to me that now that he's aware of the problem he does senses some reaction to food coloring. The prison returned a bottle of Red Hawaiian Punch that I once sent, so I'm not sure how he can do a self test, but it's something like deciding whether or not to eat red jello. I think he understands that he can not cheat in the proposed preliminary self-testing using measured amounts of Red 40. The SPECT/PET brain imagery will show whether he does or does not have reaction.

Four Requests For Support From Wallens Ridge:

1-The main request is for NE to be transported to a medical facility in Norton, Kingsport or Junction City. Which facility will be used is not yet determined, but for prison personnel they should be pretty much the same. Round trip travel and time at the facility is about half a day, so this probably requires something like three man-days of support for two guards plus driver.

2-There needs to be some way for NE to do self testing with Red 40 food coloring. I'll see if I can find some without preservative, but the standard grocery store McCormick product is sufficient. It comes in a single small glass bottle or as one of the four colors in a set of squeeze-plastic containers. I could send the ones in this picture, or I could refund the commissary for buying it. A guard could administer it to him, or I think the one little plastic container of red might be OK for him to keep it in his cell. Only about 75 or maybe 150 drops is needed total. I suggest he



start testing with 10 or 20 drops and then double or half a few times depending on reaction.

3-Perhaps more difficult is that these four self-test occasions and the SPECT/PET image taking need to be preceded by five days of avoiding all additives in food, drink and scents, a stretch of three weeks or more. The reason is that even infrequent infractions to restricted diet can become a steady state with no reaction observable. There is no way that true strict control of ingredients can happen, but fortunately I've been impressed by prison food, at least at the Fairfax County Adult Detention Center. NE passed his court-ordered psychiatric exam with rather spectacularly no symptoms found for hyperactivity or aggression. My interpretation is that the Fairfax food had far fewer offending ingredients than what he was getting at home before his crime. So the Wallens Ridge menu might OK as is, too. Also my guess is that NE is a strong enough reactor to Red 40 that tens of drops of it will still cause observable brain metabolism reaction even if he is already reacting somewhat to some other chemical he has ingested in the last few days.

Still, I'd like to be as careful here as is reasonably possible. Please allow me to see menus in advance by email. And let me communicate by phone with NE to discuss items he needs to avoid and find supplement for—or discuss with kitchen personnel in person or by phone items that might be a problem and with them figure out how to modify or supplement. The most likely problems are desserts, jello, sauces and standard-purchase products with a long list of ingredients. By what means could I provide “supplement” if needed? And alternatively, would it be more feasible to have me or a FAUS volunteer daily bring in specially prepared meals?

4-I'd like to be allowed to send a copy of this proposal to NE by US mail. Please lift the two-page limitation at least once.

5-It would be good for me to visit NE inside the prison and also to ride with him both ways to and from the medical facility. Please allow it. I'd rather not drive the 860 miles round trip to Wallens Ridge to do this and instead do all the communications by email, USPS, phone and video conference. But I have to do the drive if I am to be the test reference subject, and it would be best and certainly interesting to have a good working relationship with the guy in trouble from my son's high school.

Author Vita/Resume:

PhD in theoretical physics, Ohio State University, 1967

37 years as analyst in research and development at the Naval Research Laboratory

Publications ≈75 many classified, Patents 3, Clearance TS

I am a retired research physicist with personal and family experiences that led to doubt about some aspects of medical practice and then to extensive study of select parts of medical literature. My son had many allergies and quite disruptive ADHD that pediatricians failed to recognize or treat. Then when he was ten in 1977 my wife decided to try the Feingold diet. The abruptness and degree of change was amazing to see. He went from a kid in trouble to an academic star beyond my conception, and she changed, too. Her mood swings disappeared, and since that was quite unexpected it could not have been placebo. So I had to wonder why official psychiatry denounces Feingold's 1974 book on diet controls and the self-help group he started called the Feingold Association of the US, FAUS. I studied texts on brain physiology and anatomy and eventually read quite a bit of ADHD medical literature and in particular all or it in the 1970-1985 time period, and concluded that ADHD and some forms of depression and aggression are related conditions caused by disruption of enzymes in the brain. As described at ADHDBasics.info, works by Sanaiko, Ingram and others in the 1990s suggest that some chemicals when ingested can overload cleanup enzymes, typically in people who have had extensive antibiotics. Overload of PST apparently causes increase in MAO and thereby suppression of dopamine and other monoamine neurotransmitters. US psychiatry holds that the conditions are distinctly separate, caused by genetically inherited, fixed, hard wired brain anomaly that is fixed except

by opioid-class medication override. (The enzyme model of ADHD does not attempt to explain all depression, the worst cause of that probably being trace methanol wood alcohol in today's food supply as described at [CouldItBeFormaldehyde.info](#) Partially digest opiate peptides with leaky gut syndrome also sometimes a factor.)

University, IRB, Funding: None. This is a self-funded proposal independent of any official ADHD-related association. It is from the camp of restricted diet practitioners often referred to as Feingold or FAUS and is in opposition to NIH and APS. The issue of whether ADHD class conditions are causal has been highly polarized for 50 years, and perhaps telling is that the food industry might loose some billions per year if restricted diet were proved to be correct.

It might be interesting to ask Raine to comment on this proposal. His specialty is criminology, not psychiatry, and his 1998 work led to his becoming department chair at an Ivy League school. Walsh is another researcher who by other means found the same division of incarcerated murders into the same two groups of those with significant abuse or depravation in their backgrounds but many from benign or supportive backgrounds and families thrown into distress. Walsh retired long ago, though, so I don't know how to contact him.

How I Met NE: We've never met in person and I have received correspondence from him only four times. A 2018 newspaper article about his conviction described him as "a stellar student who had been accepted to multiple colleges and played basketball, but who had anger issues" and had been sent in his senior year to a school for problem teens. This prompted me to write to him and ask about both his background and the foods he had been eating. His 11/3/19 response was thoughtfully written and gave the detail I had asked for. Here's his list of foods just before the crime. I think I can work with him but have been delayed by the Covid pandemic.

[illegible]

Covid Considerations: This proposal is structured to have minimal person-to-person interactions. A half day trip is require at least once to a medical center for SPECT/PET imaging, and for this the foods NE is being given need to be reviewed during the prior five days. Repeating this two or three times with different dose levels of the challenge Red 40 or with a different imaging technique would be desirable but is not required.

Also, at Wallens Ridge, preliminary testing needs to be done to find how quickly and strongly NE feels he responds to various dose levels of Red 40. I do not have to interact directly while this is being done, but instead NE needs permission several times to handle and ingest, or be given, an agreed number of drops of McCormick brand red coloring, plus he needs to be able to clock and record his sense of reaction time and report observations to me.

Inmate Safety: For SPECT and PET imaging the patient needs to have a small amount of radioactive tracer injected by IV. A single injection is good for taking two images. There is a wait of about 20 min before imaging can start, and each image takes 30 min to complete. We plan a 20-30 min break between them. These imaging procedures are very common with quite low radiation exposure, but the patient has to sign a release form before the medical facility can proceed.

SUPPORTING VDOC FORMS

Four documents are required. 1,2) This file is the Research Proposal and includes the principle investigator Vita/Resume. 3,4) There is no associated university or IRB consent form. There is also an inmate consent form, but I don't see instructions for who handles this.

Five references are attached in pdf format, plus many dozens more are given in downloadable pdf at ADHDBasics.info