

The Post-Finasteride Syndrome

Theory and Possible Solution
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Short Intro

I am 43 years old and i have used Finasteride 1mg for the first time at around 1999. For 13 years i have intermittent problems which started when i quitted the drug (around 2000). The symptoms come and go but as time goes by the symptoms (impotence, psychological and neurological side effects) became much more frequent.

Initial Symptoms after Quitting

Back then I quitted the drug because i realized that my libido was not satisfactory. **The "Crash" came with some side effects that resembled an auto-immune response.** The list of side effects was as follows :

- Short lasting (3-5 secs) Tinnitus several times of the day
- Joint Pains
- Dysphagia
- Urticaria
- Low Libido
- Gynecomastia (developed over a period of 6 months)
- Red spots on palms of my hands, under the skin. The following pic resembles what it looked like



- Dry Skin on my face and hair which resembled Seborrheic Dermatitis

The doctors which i visited had no idea what caused all of these symptoms. I explained to them that my problems started when i quitted Finasteride but they did not seem to take this into account.

At the moment i have (confirmed with Blood Tests and several Endocrinologists) :

- 1) Subclinical Hypothyroidism (Receiving T4 62 mcg daily)
- 2) Secondary Hypogonadism (Low Free T, receiving HCG shots twice weekly 500 IU)
- 3) High Cholesterol
- 4) At times elevated CRP
- 5) MRI has shown a small lesion on the center of the Brain, left side. This will be re-checked shortly (if the lesion has changed or not. Neurologists did not consider this as Multiple Sclerosis as only one lesion was found)

Several Neurological Problems (which occur on and off) :

- 1) Acute Hearing Loss has happened two times
- 2) Numbness on my fingers
- 3) Restless Leg Syndrome (RLS)
- 4) Myoclonus
- 5) Orthostatic Hypotension
- 6) Acute Vasoconstriction (more on this later)

Progress of the Syndrome

Over the previous years i had "attacks" on and off. **An "attack" means the following order of events :**

- 1) A short-length (1-2 seconds) tinnitus on my left or right ear (bi-lateral) but mostly the right ear .
- 2) Dry skin on my face which resembles seborrheic dermatitis
- 3) Impotence

The sides (2) and (3) above would last for about 5 days until the next attack. In the beginning i had attacks once every 6 months. Then this became once every 3 months. Now this is almost every 3-4 days.

In the beginning of the attacks i had no Neurological/Psychological problems. However over the past couple of years i developed Neurological and Psychological side effects including :

- Bad Sleep Quality (Waking up at 4:00 am and not going back to sleep)
- I cannot remember any dreams
- Memory severely impaired
- I lost 2 times my hearing on my right ear for about 10 hrs. ENT Doctors did not find any problems
- I lost the sensation on two fingers on my right hand for about 3-4 hours.
- After an MRI, i found a lesion on my brain (left side), which several neurologists said that "it is in an area that does not create problems" and that "We should re-check" in 6 months and that this is "definitely not Multiple Sclerosis". I will have a new MRI very soon.
- Depression
- Not being social
- Orthostatic Hypotension and Vasoconstriction.

Regarding Vasoconstriction : i have a very deviated septum so most of the time my left nostril is blocked. If you ever used vasoconstrictors for unblocking your nose you might feel that your nostril makes a "click" sound and soon after you can breath better. The same happens to me when i get a bit stressed (i hear a clicking sound on my left nostril). **That has led me to believe that since DHT exists in the adrenals, the adrenals are also affected because the immune system might be hitting the adrenals as well.** Note that if you are experiencing vasoconstriction this might be affecting the quality of your erections.

The Theory

Taking into account the way that Finasteride has affected me i believe that PFS sufferers (or at least a percentage of them) have developed autoimmunity to DHT. DHT exists in hair follicles but also on the adrenals, the prostate, the liver and possibly in certain areas of the Brain including the hippocampus and the frontal cortex. So there are many side effects which are relevant to the sites where the immune system attacks. More specifically :

Brain : Insomnia, Brain Fog, Depression, Penis feeling unconnected (although this could be due to Low DHT - More on this later), Hypothyroidism, Secondary Hypogonadism, Tinnitus, Not being Social. Quite possibly some neurotransmitters are affected but i do not have the knowledge on the possible underlying mechanisms.

Adrenals : As discussed I experience very frequently orthostatic hypotension and vasoconstriction.

Prostate : Prostatitis in some ex-Finasteride users (but hasn't happened to me).

Skin : Seborrheic Dermatitis on hair and face, Urticaria

If the Theory is correct, as PFS sufferers we are in a "Catch-22" situation. This happens because :

If DHT is low we experience Low Libido but we keep our immune system at bay.

If DHT is high we experience all the side effects that arise from the attacks of the immune system to several DHT sites (including neurological side effects, psychological side effects etc).

The "on" and "off" periods are simply when DHT is low / high. If levels rise then the immune system attacks all sites where DHT exists , causing several problems described above.

The Analysis

I kept a very detailed diary of what foods i was eating, if i exercised and the supplements that i used. A total of 408 days (slightly more than a year) and 108 dependent variables. Statistical techniques were used to analyze the data collected over this period. Someone which i will not disclose has helped me in the analysis of these data.

NOTE : THE ANALYSIS SHOWS THAT THE NUMBER OF OBSERVATIONS ARE NOT ADEQUATE SINCE MANY DEPENDENT VARIABLES EXIST. HOWEVER, IT MIGHT HELP IN POINTING TO THE RIGHT DIRECTION OF ACTION.

A predictive model (called Random Forests) was found that is able to predict my "attacks" as follows :

	FALSE (Actual)	TRUE (Actual)
FALSE (Predicted)	86 (tn)	17 (fn)
TRUE (Predicted)	8 (fp)	86 (tp)

tp=TRUE POSITIVE

tn= TRUE NEGATIVE

fp=FALSE POSITIVE

fn=FALSE NEGATIVE

and

$$\text{Precision} = \frac{tp}{tp + fp}$$

and

$$\text{Recall} = \frac{tp}{tp + fn}$$

we have :

Precision : 91.48%

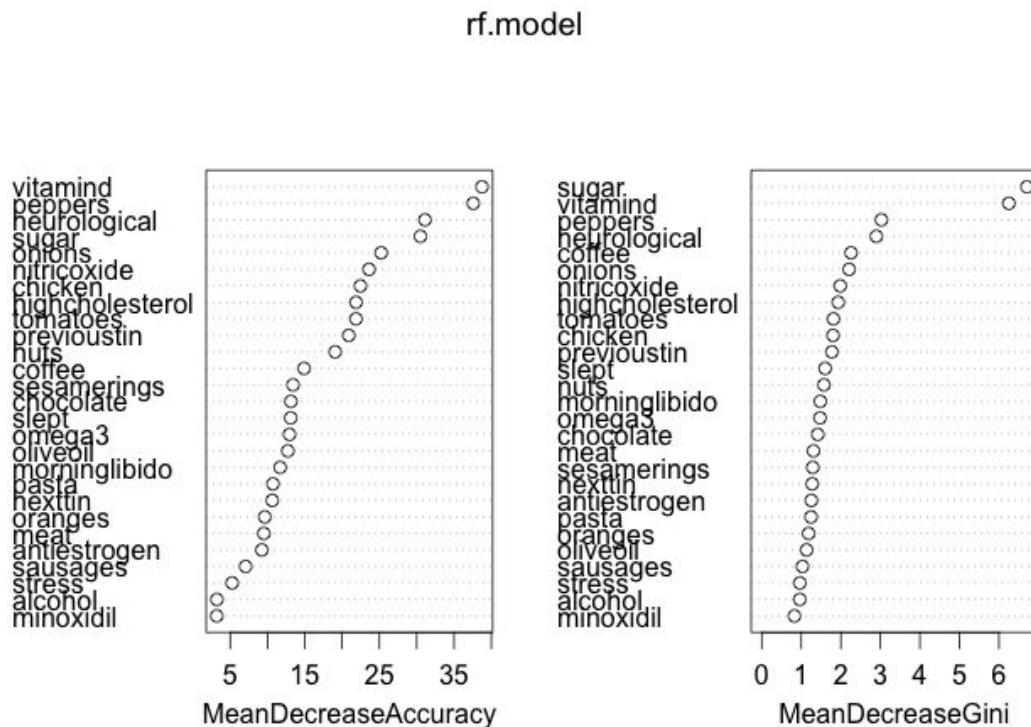
Recall : 83.49%

This means that the model accurately predicts correctly 91.48% of time the 83.49% of cases. **These results however should be taken with 3 -not 1 - grains of salt due to the relatively small amount of observations (=days recorded) and many dependent variables (as discussed on the note previously).**

The analysis has shown that some foods and supplements had an importance in terms of Neurological side effects and the "attacks" i was getting. These foods/Supplements were (in order of importance) :

- 1) Sugar
- 2) Vitamin D3
- 3) Red Peppers
- 4) Salmon
- 5) Zinc
- 6) Magnesium

The following is from an example run of a Random Forest which shows variable importance. Some boolean variables (salmon, mushrooms, zinc, magnesium) are not present as these features were somewhat problematic - the same as having a numerical feature with a very low variance :



-Sugar is the single most powerful predictor (as found in most of the algorithm runs). The probabilities of an attack were significantly lower when at least 6 spoonfuls of sugar are consumed on a daily level. I do not know why this happens but there may be a reason : The following link suggests that high insulin levels cause a temporary suppression of the immune system.

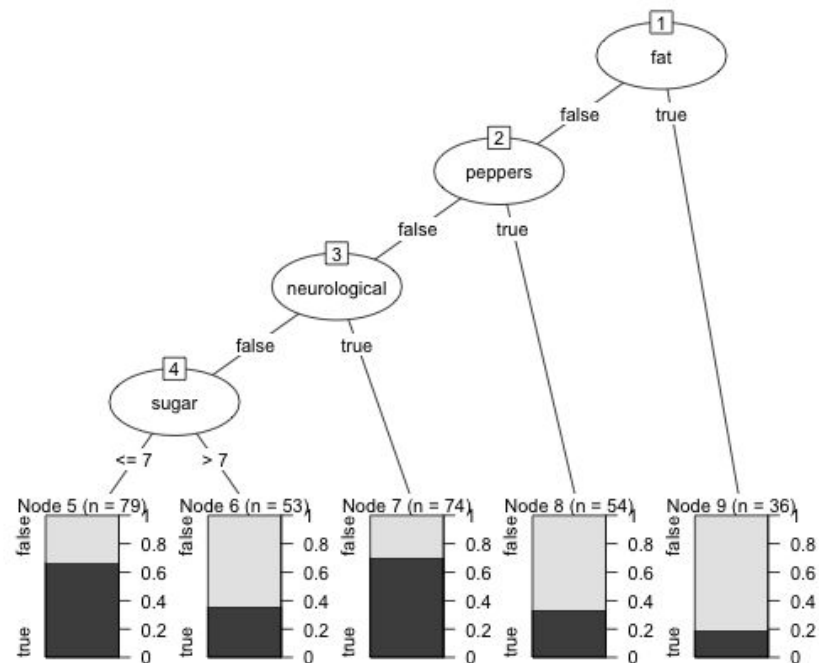
See : <http://news.georgiahealth.edu/archives/1541>

-What do Red Peppers and Salmon share in common? The answer is astaxanthin, a 5-AR Inhibitor.

I then realized that whenever i would eat Red Peppers / Salmon i had no Neurological side-effects but in contrast my libido was not good.

-High levels of Vitamin D3 (>2000 IU per day) had a positive effect when no milk is consumed. If milk was consumed then an "attack" would happen. **However the quantification of Vitamin D3 intake is not possible on the "highly accurate" model but was only found with decision tree models which have much inferior predictive accuracy.**

The following chart is called a Decision Tree and is also a Predictive Model and is able to predict my attacks with a 61% accuracy (as opposed to the previous model which has much higher predictive accuracy). With this we are able to see what differentiates days where i had problems from days that i did not experience problems (=attacks). Here is the Decision Tree :



The Decision Tree tells us the following information :

IF FAT was consumed THEN FALSE(=no attacks)
ELSE IF FAT was NOT consumed but PEPPERS were consumed then FALSE
ELSE IF Neurological problems occurred then TRUE (=attacks occurred)
ELSE IF SUGAR>7 THEN FALSE
ELSE TRUE

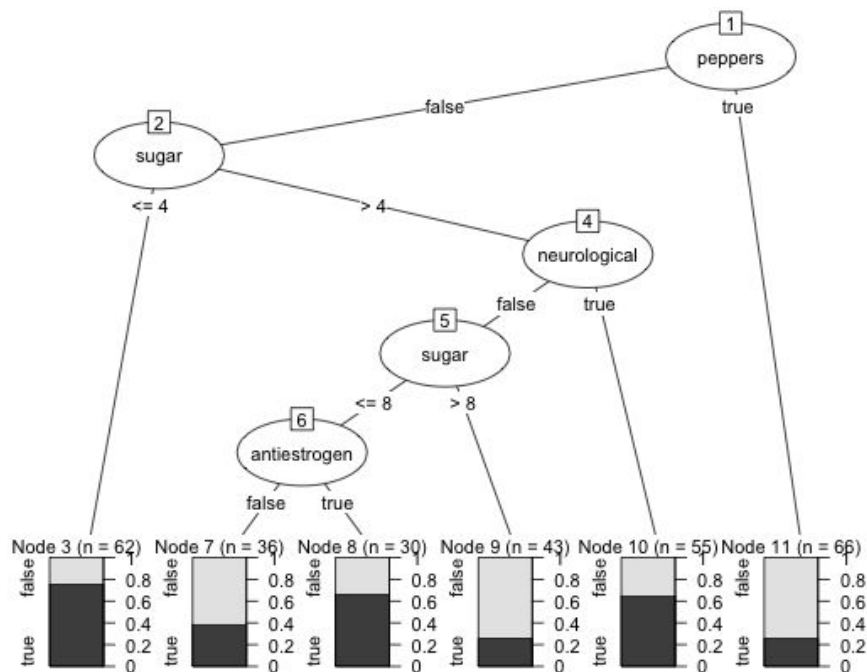
Some things to note :

Notice how the distribution of FALSE vs TRUE changes. When the Bar-chart is mostly Black then this means that for n days (shown above the bar) there were problems most of the time. If it is Gray it means that most of the time no attacks occurred.

Notice also that Neurological problems correlate with my attacks (it does NOT mean that my neurological problems create my attacks or vice-versa).

The results are somewhat different from what it was discussed above (regarding Vitamin D3, Salmon, Zinc, Magnesium) but some things are there (such as Red Peppers and Sugar although Sugar appears to have the least importance - but remember that Decision Trees have inferior predictive quality)

This is one more run using Decision Trees :



Notice again the existence of sugar and (Red) Peppers selected by the algorithm.

The (Possible) Solution

A possible solution -at least for some PFS Sufferers- could be the use a 5-AR Inhibitor *once again* and slowly inhibit a smaller percentage of 5-AR so that DHT is introduced to your body as slowly as possible. That in effect "Re-Trains" your immune system so that it does not identify DHT as a foreign substance. **Recall that some people suggest that Finasteride should be stopped gradually and not abruptly. Perhaps this is the reason and the solution to our problem.**

I eat 3 grams of Red Pepper every day, i supplement with Omega-3 (1000 mg) and also 5000 IU of Vitamin D3. The dosage of Red Peppers is dropped by 0.5 grams every 3rd day (you need a precision scale to do this).

Unfortunately the Astaxanthin supplements that i found are in liquid form (that means i cannot dosage it properly) so i rely in using red peppers which also means that my astaxanthin dosage is not the same due to variation of each red pepper consumed.

I also found that mushrooms affect negatively my libido and i have the sensation that my penis is "not connected" when i ingest many of them (e.g 100 grams). So, this sensation could be due to the fact that there is not enough DHT in my body (recall that mushrooms are *both* an Aromatase inhibitor *and* a 5-AR inhibitor) at this time or that Estradiol (E2) drops very much.

Results (So Far)

I haven't had an attack for more than 20 days. My libido is not fantastic but i can function quite well and it gets progressively better (since i am inhibiting less and less DHT). I sleep great, remember my dreams, i do not have any neurological problems, i became much more sociable. My Orthostatic Hypotension is still there and so is my acute vasoconstriction.

I URGE EVERYONE (**AT YOUR OWN RISK**) TO DO THE FOLLOWING. THIS WILL TAKE SOME TIME TO SHOW RESULTS (= AT LEAST 12 DAYS) BUT THIS IS HIGHLY SPECIFIC FOR EACH INDIVIDUAL.

1) Start eating 4 grams of Red Peppers on a daily basis (in the morning) and after 3 days start lowering the dose. NOTE THAT YOUR LIBIDO WILL NOT BE GOOD BECAUSE YOU ARE USING A 5-AR INHIBITOR. You might also try white button mushrooms (*Agaricus Bisporus*)

2) Start lowering the red peppers dosage by 0.5 grams every third day. NOTICE CHANGES IN YOUR LIBIDO. IS IT GETTING GRADUALLY BETTER??? NOTICE IF YOUR SKIN BECOMES OILY. IF YES, THIS IS DHT BEING RE-INTRODUCED TO YOUR BODY.

3) Supplement with Vitamin D3 at least 2000 IUs per day and OMEGA 3 (1000 mg), Magnesium and Zinc. Watch your 25 OH(D) Levels, Calcium

4) EAT AT LEAST 6 spoons of sugar daily. CHECK YOUR SUGAR BLOOD LEVELS BEFORE DOING THIS.

5) ***DO NOT*** USE ANY OF THE FOLLOWING. NOTE THAT The text is color-coded. Whatever is written in blue is possible but not certain. All text in Red suggests certainty to what is written.

-Milk (Raises DHT) or any other Calcium source in conjunction with Vit D3. Wait 6 hrs after you have taken Vit D3 if you want to take food which contains calcium.

-Whey Protein (Raises DHT) and probably will induce an autoimmune response.

-Vitamin A in conjunction with Vitamin D3 (DO NOT consume many Carrots as well).

-Mushrooms : They are a potent Aromatase Inhibitor (see http://en.wikipedia.org/wiki/Estrogen#Breast_cancer and) and will suppress your DHT levels even more (see <http://www.aacrmeetingabstracts.org/cgi/content/abstract/2005/1/1221-b>)

-Do not eat Salmon AND Red Peppers and/or Mushrooms at any one day because you will over-inhibit your DHT (which means no libido and feelings of your penis being "unconnected").

GOOD LUCK