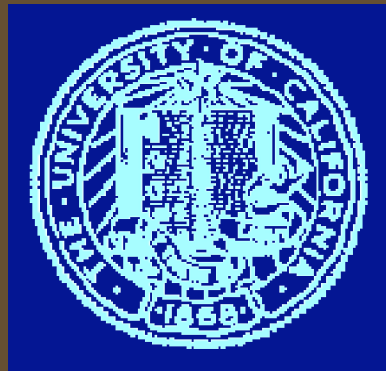


A Case of the Re-Emergence of Panic and Anxiety Symptoms After Initiation of a High-Protein, Very Low Carbohydrate Diet

A CASE REPORT



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Generalized Anxiety Disorder

- Prevalence: >4 million Americans or 4-6%
- 90% of GAD patients have a lifetime history of another psychiatric diagnosis, particularly depression
- Twice as many women than men

* NIMH

Panic Disorder

- Prevalence: 2.4 million Americans or 0.88%
- 44% of population experience panic life time
- 1/3 of PD – disabled, 1/3 had at least 1 SA, 1/3 use alcohol or drugs

* NIMH

Case Report

- Ms. A, 37 year old woman
- 2 wk h/o daily episodes of increasing panic attacks
- (Lightheadedness, feeling "sick to her stomach, chest tightness, dizziness, an overwhelming sense of fear without depression)
- Sudden onset, lasted 30-45 mins.
(precipitant = imminent vacation plan)

Past Psychiatric History:

- Similar attacks 4 yrs ago
- Extensive medical work-up, including Normal echocardiogram, ECG, upper endoscopy, and blood work
- She had had 6 months of daily attacks, during which she severely restricted her trips outside her home
- No h/o psychiatric hospitalization or symptoms of any other psychiatric illness

Contd...

- Twice-weekly counseling for 3 months and Alprazolam (Xanax) for 1 year
- Ms. A had been off Alprazolam for 2 years before the reemergence of symptoms
- No other medications/medical conditions

Treatment

- Alprazolam (Xanax), titrated to 1.0 MG QID and Sertraline (Zoloft) 50 MG/day
- Her panic attacks and phobic avoidance resolved completely over the ensuing 10 years

At the age of 47...

- Patient decided to go on Atkins diet, she weighed 252 lbs. and had struggled with weight for most of her life
- After starting Atkins diet, she felt “shakiness”, eventually progressed to a full-fledged panic attack later
- She increased Sertraline to 100 MG but continued to have frequent panic attacks, and there was a marked increase in her baseline level of anxiety over next 4 wks

Contd...

- She believed that diet was connected to the symptoms, but didn't stop the diet as she had lost 17 lbs.
- Ultimately began eating carbohydrates and quit the diet due to her increased anxiety
- Symptoms improved gradually, all symptoms were resolved after several days and did not recur

Discussion

- Both anxiety disorders and dieting are common in the US and more common in women
- The lifetime prevalence for anxiety disorders and panic disorder are ~ 19.2% & 2%, respectively*
- The point-prevalence of dieting among U.S. adults is 16.5%, with the highest prevalence being among white women (21.1%)*

*(Paeratuki S, 2002)

Contd...

- Many diets involve severe restriction of carbohydrate intake
- 25 million Americans are following the Atkins diet, 1/3 of American adults restrict Carbs (*Gloede W, 2003)

THE ATKINS LIFESTYLE FOOD GUIDE PYRAMID™

Whole grain foods such as
— barley, oats and brown rice

Vegetable and seed oils, cheese
and dairy, nuts and legumes

Fruits such as — blueberries,
raspberries, pears and avocados

Vegetables such as — salad
greens, broccoli, cauliflower,
asparagus and spinach

Protein sources such as — poultry,
fish, beef, pork, and soy products



HERE'S WHAT YOU DO:

NO

ADDED SUGARS & HYDROGENATED OILS

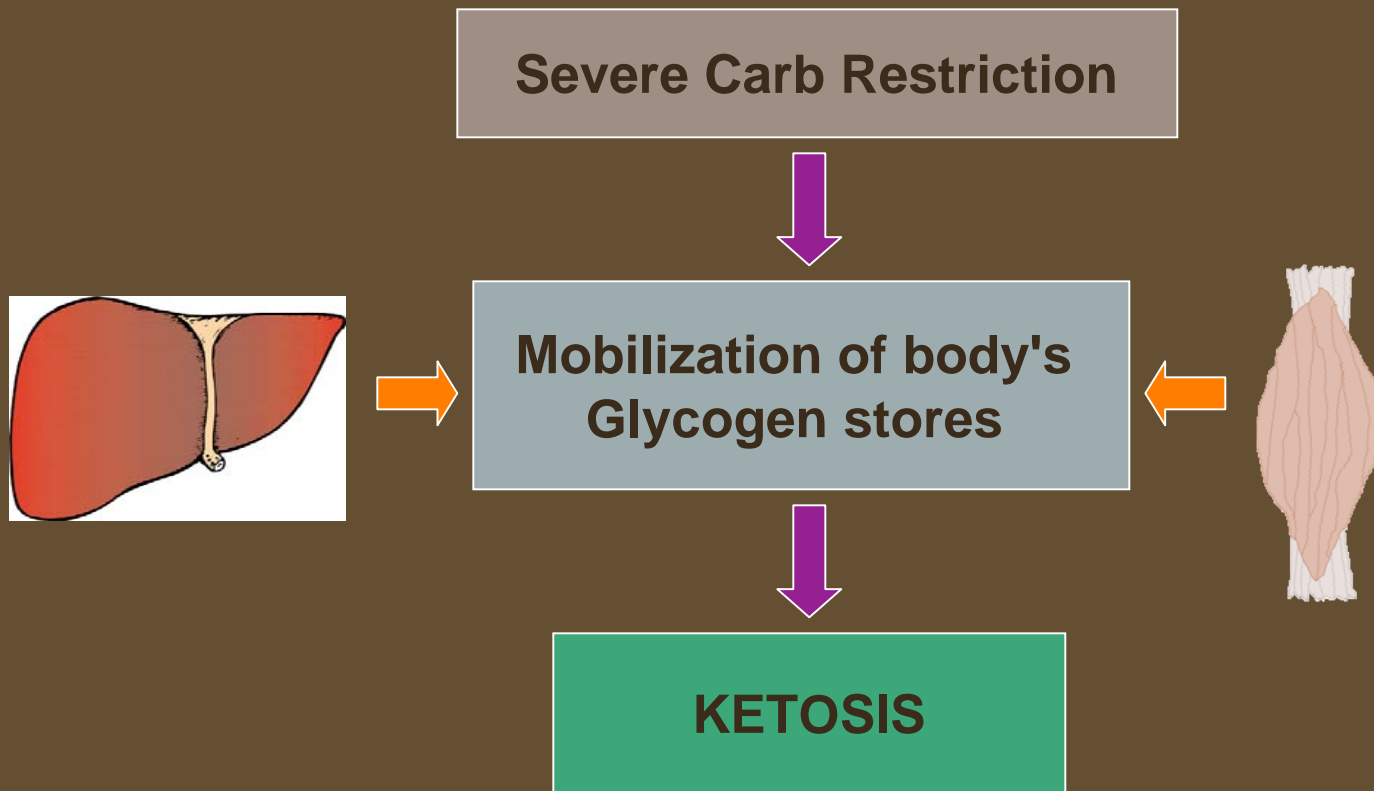
1. Limit and control certain carbohydrates to achieve and maintain a healthy weight.
2. Choose carbohydrates wisely (vegetables, fruits, legumes, whole grains), avoiding refined carbohydrates and foods with added sugars.
3. Eat until you are satisfied:
 - to maintain weight, eat in proportion to the pyramid.
 - to lose weight, focus on protein, leafy vegetables and healthy oils.
4. Everyone's metabolism and lifestyle are different. Discover your individual carb level to achieve and maintain a healthy weight. Raise this level with additional exercise.

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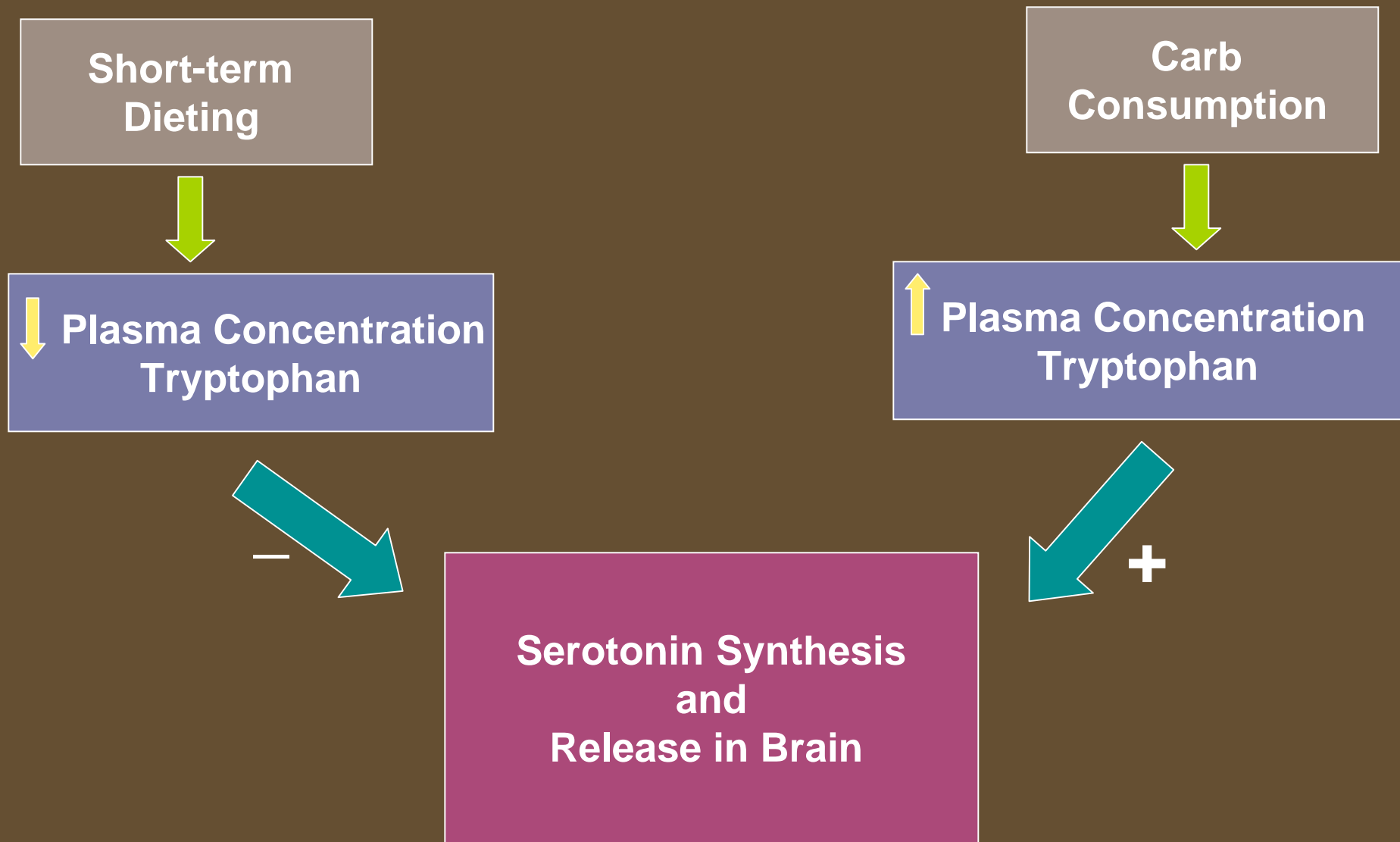
- Dr. Atkins noted that his diet may cause fatigue, faintness, palpitations, headaches, and cold sweats during first 3 days (withdrawal from foods to which the patient was addicted)
- This phenomenon probably does not explain this patient's symptoms, since her symptoms lasted for 4 wks.

Possible mechanisms

Atkins diet may worsen panic disorder by induction of ketosis and effect on brain serotonin levels



Dehydration: headache, confusion, lethargy, dizziness irritability



*Attenburrow MJ., Psychol Med 2003

*Wurtman RJ., Am J Clin Nutr 2003

Contd...

- Therefore, it is likely that a low-carb diet would lower brain serotonin levels
- Experimental designs: short-term depletion of tryptophan have found an adverse effect on mood in patients with h/o depression, mixed findings in worsening of panic disorder (*Van der Does AJW, 2001., Kent JM, 1996)
- A study found that tryptophan depletion increased depression, anxiety, and somatic scores in SSRI-recovered and medicated depressed patients, as compared with control condition (*Spillman MK, 2001)

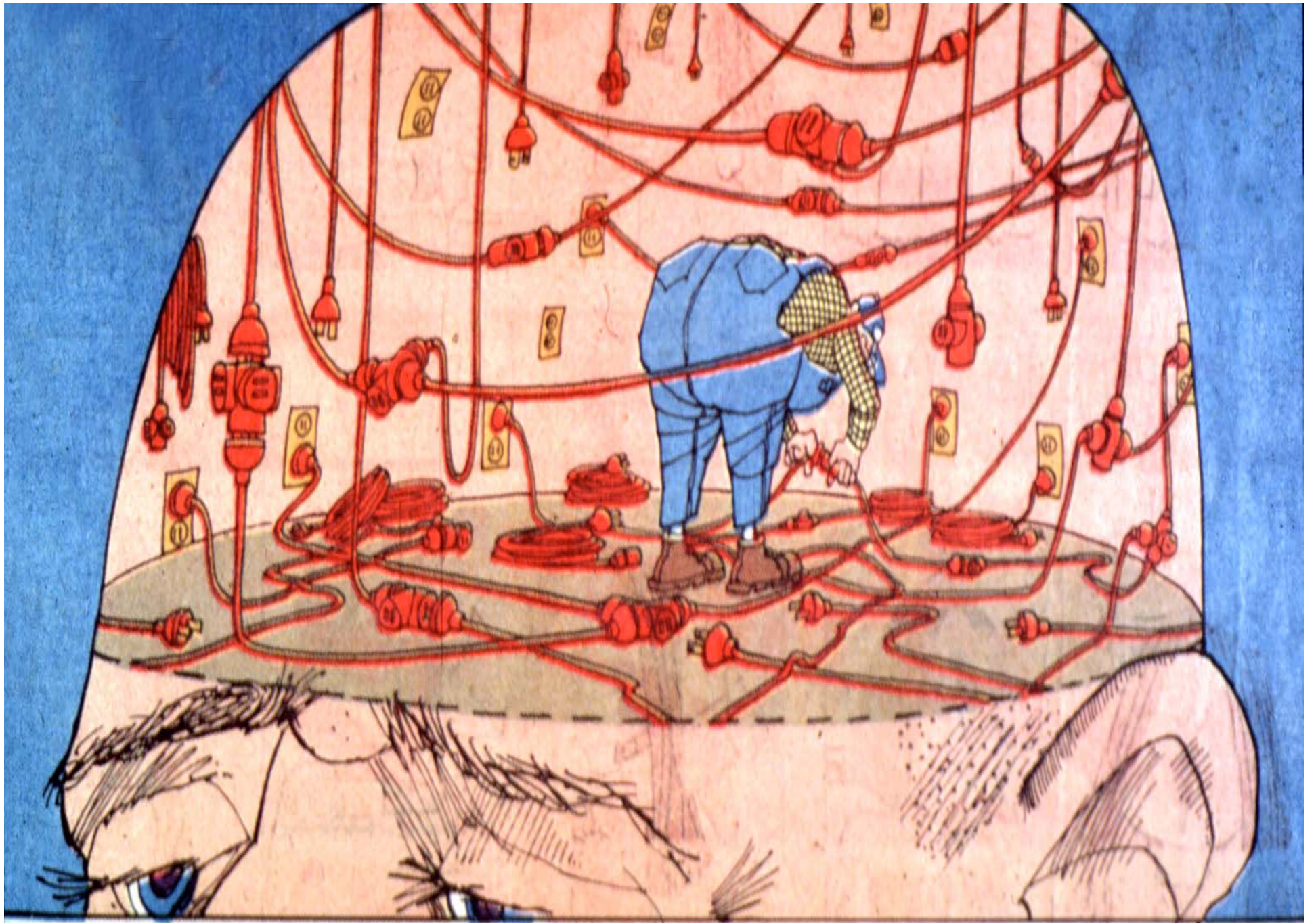
Conclusion

- This patient's hx demonstrated a marked temporal correlation between the beginning and ending of Atkins diet with relapse and resolution of panic symptoms
- The prevalence of dieting in the population suggests the prudence of inquiring abt changes in diet when a previously stable anxiety disorder patient experiences a relapse

A case of the re-emergence of panic and anxiety symptoms after initiation of a high-protein, very low carbohydrate diet.

Source: Psychosomatics. Ehrenreich, MJ., 2006
vol:47 iss:2 pg:178-9

THANK YOU!



How the brain works.