

# The Secrets of Alice in Wonderland Syndrome

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## ABSTRACT

Alice in Wonderland syndrome results in changes in the perception of one's surroundings. These changes include both micropsia and macropsia (everything appears reduced or enlarged), as well as altered auditory perception, altered tactile perception, and altered sense of time. The syndrome is particularly common in children. This manuscript focuses on the current scientific knowledge of this mysterious syndrome.

## Introduction

Alice in Wonderland syndrome was named after Lewis Carroll's children's book Alice in Wonderland and described by John Todd as a possible equivalent of migraine and epilepsy. Lewis Carroll was diminished by migraine attacks himself. Additionally, Carroll's narrative has been discussed as a description of a trip following consumption of drugs. However, there was no evidence of any drug use or medication by Lewis Carroll. In general, Alice in Wonderland syndrome results in changes of visual perception of one's own surroundings. These changes could include both micropsia and macropsia, as well as disturbed auditory perception, disturbed tactile perception, and time distortion. The syndrome is particularly common in children, but also found in teenagers and adults. Attacks are often shorter and may also be completely painless, although additional symptoms such as nausea, vomiting, and sensitivity to light and sound are sometimes found. Neurological deficits may often occur, so that the affected patient begins to hallucinate in different ways. The patient perceives his or her body as larger or smaller and/or begins to see fantastic images which are completely different from patient to patient. The changes in perception can severely affect affected individuals, causing them to become disoriented. The perceptual disturbances can lead to Alice in Wonderland syndrome being confused with other mental disorders.

## Case Reports

### Case 1. 24 y Old, Male, Micropsia

Personal description in first person: "It has happened since I have memory and I can barely describe it better than this. Once I realize it's happening it's always in the same situation, sitting and talking to a person, right in front of them. I feel like in some way my mind goes to the back of my head and the voice of the other person becomes super far from me and I can't even pay attention to what they are saying anymore. At the same time, their head gets super small, and I interpret it as just their head going far, as a thing that becomes tiny because of how far they are. I'm pretty sure it lasts for some minutes, not too long but not for some seconds, something between 2 min to 8-10 min. I say that I'm pretty sure because in some way I think I'm not aware of the time at that moment, but I can't measure it because it has happened always while I'm sitting so, I've never been on movement while it happens, and it always seems to be when I'm pretty focused on chats. I also know that as a child it was more often than now that the last episode was about 3 weeks ago and it's the first time of this year. Thinking about how often it is I would say that definitely it's not too frequent now, maybe twice or three times per year but in my childhood, it would

happen maybe once or twice per month. I've never experienced things going bigger or migraines as most descriptions about AIWS information and research shows. The last episode was 3 weeks ago and again it was exactly in the same way, tiny head, the deep perception got weird, and the voice of my flatmate sounded pretty far even though she was right in front of me, no more than 2 meters and it was the first time I described it to someone because I was kind of scared of people thinking that I'm going crazy or something. One of the things that got my attention was that it might be related to poor sleep and I'm currently, since a month ago, not having a good sleep at all, actually here it's 4:40 am and I'm still up. I would say that everytime that I try to recall the memories it appears to be something that I dreamt off or not so real, so I thought for several years that I was making them up. These episodes are so far away one from each other now that I feel nothing but curiosity about it, so I talked to my psychologist, and she talked about this syndrome and most of the signs are there so I don't know".

### **Case 2, 45 Y, Male, Sexually Abused by Father, Migraine, Starting Age 7**

A 45-years old man presented with his story in early childhood and described a period of 5 years in which he had been sexually abused. He described his bizarre experiences as follows: "From the age of 7 to 11 I had been sexually abused, hunted like an animal. My mother noticed that she would sometimes talk to me and I wouldn't hear her or she would sound so faint as to be almost imperceptible and unnoticeable. My mother noticed when I was at 10/11 years of age. Mum took me to see a Pediatrician and I was eventually, after many EEG's and appointments, diagnosed as having Epilepsy and prescribed Epilim 500mg, Sanomigran 0.5 mg and another whose name I forget but I recall it looked just like a Cod Liver Oil capsule but was not Cod-Liver Oil. My parents knew nothing of the abuse until I was around 32 years of age. I should also add that at the time of the sexual abuse I had also banged my head severely on a number of occasions, twice, one time causing me to wake in a pool of my own blood and on a separate occasion almost ended up on the back seat of a Mini after being knocked off of my bicycle but luckily I bounced off of the windscreen merely shattering the glass and scaring the life out of the driver, this certainly was one eventful wet rainy Sunday afternoon, 4:40p.m. Sorry to digress. What I recently found is that a name exists to describe - Alice in Wonderland Syndrome. I think I discovered the term about two or maybe three years ago but am unsure exactly when as I now suffer with Chronic thromboembolic Pulmonary Hypertension so my memory can be 'patchy' with recent events and certain words that I can also forget.

To clarify, I was brought on after I fell backwards out of a narrow opening upstairs (first floor so about 10 metres up) window then "bouncing" off a two-meter-high stone wall with jagged rocks on

its top-side onto the concrete floor after losing my door keys. This left me no alternative but to try and climb in whilst intoxicated on alcohol in drizzling rain. I woke up on my bedroom floor some four days later with no memory at all of what had happened. My neighbors then explained to me what I had done about six weeks later when I finally managed to get out of bed and out of the house. The only way I could describe to the Pediatrician was that whilst sitting at home the room would pull away from me extending into the distance, very similar to when you see a specific type of camera shot used in Hollywood movies where the camera is close-focussed on, for example, a face and then they 'pull-zoom' keeping the face roughly the same size but now you can see the whole big background which has now come into view after 'pulling zoom'. This was the only way I could describe it until a year or two ago when I stumbled by chance on some 'evidence' pertaining to MKUltra experiments - "child trauma bonding" I think it was called in these documents on the 'net and also the term "Alice In Wonderland Syndrome" was introduced to myself in these documents. I suffer from major migraines either before or after the AIWS event that can often last up to two weeks (the longest I remember having migraine for) and are absolutely completely debilitating.

### **Case 3, 30y Old, Male, Chronological Retrospective, Starting Age 6, Macrosomatognosia**

"As it started having them, I would tell my mum "It is happening again, I feel strange", so after it started happening regularly, my mum took me to the doctor, and they said it was vertigo. So ever since I believed that's what these episodes were, but as I got older and learnt more about vertigo (symptoms and causes), my episodes didn't match at all. But life goes on and I put the whole subject to one side, not knowing what it actually was, but kept having these episodes. I can't remember how I found out about AIWS but it was early 2017, and I was nearly brought to tears by the similarities; the typical starting age, prone around tiredness or night and migraines, visual, touch and hearing effected, feeling as though everything around me and my thoughts were going fast, being rushed, or on echo and repeat. Since I started having these episodes as a child, my pillows and duvets have always been the first signs that I feel when an episode starts, because I'm usually in bed when they start. It's difficult to describe fully how they physically feel when I touch them when I'm having an episode. They don't feel normal, my duvet feels paper thin. When I had episodes that started in bed, when my hands are flat in between the pillows they feel big, so now I consciously don't do it, or I close my hand in a fist under my pillow, because it's a fear reminder of previous episodes.

I feel vulnerable to an episode when my hands are flat under my pillow. It's difficult to give an example, because whatever I say, simply wouldn't make sense from someone else's perspective

listing to me who hasn't experienced it. I'm thirty now and I'm still having them. The episodes never change, they still feel exactly the same as they did as a child, still unsettling and can come on at the drop of a hat. The only thing which gets me through them is knowing it'll pass, I usually sit on the floor, close my eyes and imagine sitting at the top of a mountain trying to erase my mind of thinking about anything. But the last episode lasted roughly one hour, whilst at night, and the only thing which helped me was playing a YouTube meditation video of rain sounds. Every episode feels the same since the beginning when I was around 6 years old: perception of objects sizes getting bigger or smaller or both (making me confused), everything is happening very fast around me and I feel like I'm moving fast when I'm not, including sounds and thoughts going fast. When I read that AIWS sufferers lose their sense of time, I remember that time doesn't come to mind at all, it's as if time doesn't even exist while I'm in an episode where I don't think about being aware of my sense of time. All I feel is that everything around me is happening very fast, including thoughts and conversations. I have hallucinations of people's heads".

## Discussion

Sometimes she's big, then she's small again. In the story "Alice in Wonderland" by Lewis Carroll, Alice experiences a series of serious things. Lewis Carroll himself had epilepsy. Todd suspected that the novelist drew inspiration from his own experiences; the extent to which his experiences with the condition served as inspiration for this and similar scenes is unclear [1]. The wondrous adventures have even made their way into medicine to define a bizarre visual perception, which later called the "Alice in Wonderland syndrome". Alice in Wonderland syndrome describes a condition associated with bizarre perceptual disturbances. John Todd first described the syndrome in 1955 [1]. Todd observed that patients suffering from migraines or epilepsy sometimes perceive themselves or their surroundings as too small or too big in size [1]. Objects that are far away can appear closer and vice versa. Different forms of visual disturbances can occur simultaneously in the same patient. It is particularly common in children, but it is also described in teenagers and adults. In a few cases, familial cases are known [2,3].

Alice in Wonderland syndrome is most frequently seen starting around 6 years of age [4]. The male/female ratio depends on the age range and differs considerably in the different age groups [5]. The syndrome is associated with different infectious disease as well as post-surgical state, traumatic injuries, epilepsy or cortical dysfunction with decreased cerebral blood flow measurements [5-12]. Surprisingly, patients described Alice in Wonderland like seizures retrospectively in relation with sexual abuse [13-16]. Many different triggers make the search for origin of the disease more difficult. A genetic origin will be supposed, especially because

of familial cases, where disturbed visual perceptions will be found in parents and their children [2,3]. An important role seems to have the temporal-parietal-occipital carrefour. In this region of the brain somatosensory and visual impulses will be generated into internal or external manifestations. Changes in electric impulse intensity in this region can induce visual and sensorimotor manifestations as seen in Alice in Wonderland syndrome. Alice in Wonderland Syndrome seems to have more than 60 symptoms described in literature.

The lengths of any seizure episode differ in each person, but time duration of 10 minutes up to 1 hour was described in literature [17-21,10]. Alice in Wonderland syndrome like seizures seem to be reproducible and be inducible by body part positioning and in mediation setting [22,23]. Alice in Wonderland syndrome has no standardization in treatment but underlying disease like migraine could be treated in any way. Many aspects of Alice in Wonderland syndrome are to date unclear and have to be ruled out. Genetic analysis of familial cases should reveal any sources of mutation or genetic disturbance in these patients [2,3]. Further intensive research is necessary to clear the origin of this mysterious syndrome [24-34].

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