



## An Article on Alice in Wonderland Syndrome

**Stella Gracy\* and Khandhiya Aashiyana**

*Vice Principal, Mantal Health Nursing, Welfare Institute of Nursing and Midwifery, India*

**\*Corresponding Author:** Stella Gracy, Vice Principal, Mantal Health Nursing, Welfare Institute of Nursing and Midwifery, India.

**Received:** July 15, 2023

**Published:** March 06, 2023

© All rights are reserved by **Stella Gracy, et al.**

### Abstract

Alice in wonderland syndrome is also known as Todd's Syndrome or Dysmetropsia. It is a Neuro psychological condition that causes a distortion of perception. It is often associated with migraines, head trauma, viral encephalitis and with abuse of some drugs. Clinical manifestation of this syndrome includes perceptual distortion such as micropsia, macropsia, Peleopsia and teleopsia. Finally treatment part explains about management and recovery of symptoms.

**Keywords:** Alice in Wonderland Syndrome; Todd's Syndrome; Perceptual Distortion

### Introduction

Scientific professionals do not like phrase syndrome due to its complexity. There is a difference between syndrome, disease and sickness. Out of this, syndrome is greater risky and often tough to treat because of its headaches and diagnosis.

Phrase Syndrome is derived from the Greek "syn", for "collectively", and "drome", for "run". So, that is a group of findings that have a tendency to look in some of folks who otherwise are not associated.

A syndrome is a collection of recognizable developments or abnormalities that tend to occur together and are related to a specific ailment. A syndrome is actually a collection of tendencies or extraordinary features that run together or in simple words, a syndrome is a term that refers to a disorder or a ailment that has more than one figuring out function or symptom.

Disease: A sickness is a clinical circumstance of the frame which disrupts the regular functioning and physiological approaches. Every disease has its very own signs and symptoms and signs attributed to it. It is commonly regular that there are 4 kinds or illnesses pathogenic, hereditary, physiological and deficiency.

### Disease

A disruption of the disorder to the everyday or normal functions inside the body or part of the frame is disease.

As an example, a disease resulting from cardiovascular ailment is an arrhythmia or irregular heartbeat. An arrhythmia isn't always a disorder itself - it's an odd heartbeat that occurs because of having cardiovascular sickness.

A syndrome refers to a set of symptoms, whilst a disease refers to an established condition and ailment is an altered ordinary/regular feature of the body.

One of the rarest neuropsychiatric syndrome, Alice in Wonderland Syndrome (AWS) additionally referred to as Lilliputian hallucinations, is a circumstance where in visual perception is altered.

### Definition

Alice in wonderland syndrome is an extraordinary disorienting neurological, neuropsychiatric situation that causes transient episode of distorted perceptual disturbance. It impacts the manner

individual perceives sight, listening to, touch, sensation and time. It causes brief episode of distorted notion and disorientation. Patient can experience large or smaller than he/she absolutely are. It seems to shift and experience further away or nearer than it virtually is.

### Epidemiology

Medical studies amongst patients with migraine suggest that the prevalence rate on this institution can be round 15%.

### Reasons/etiology

- According to NCBI following are direct reasons of AWS
- Head trauma
- Migraines
- Infection
- Brain tumours
- Acute Disseminated Encephalomyelitis.

### Other feasible causes include

- Stress
- Cough medication
- Use of hallucinogenic drugs
- Epilepsy
- Stroke

### More not unusual reasons reported of AWS

#### Headaches

- Migraine
- Abdominal migraine
- Cluster headache
- Tension type headache
- Cope with: syndrome of brief headache and neurological deficits with cerebrospinal fluid lymphocytosis

#### Epilepsy

- Temporal lobe epilepsy
- Frontal lobe epilepsy

#### Infectious diseases

- Epstein-Barr virus
- Coxsackie B1 virus

- Cytomegalovirus
- Influenza a deadly disease
- Mycoplasma
- Varicella-zoster
- Typhoid encephalopathy
- Lyme neuroborreliosis
- Streptococcus pyogenes (scarlet fever and tonsillopharyngitis)
- Parainfective vasculitis

#### Cerebrovascular diseases

- Intraparenchymal haemorrhagic stroke
- Ischemic stroke
- Cavernous angioma
- Robin Hood syndrome
- Pituitary infarction

#### Different organic mind diseases

- Acute disseminated encephalomyelitis
- Glioblastoma

#### Psychiatric disorders

- Depressive disorder
- Cotard Syndrome
- Capgras Syndrome
- Schizophrenia
- Schizoaffective disorder

#### Drugs

- Dextromethorphan
- Cough syrup (containing di-hydrocodeine and DL-methylephedrine)
- Montelukast
- Topiramate
- LSD
- Hallucinogen Persisting Perception Disorder (HPPD) after LSD withdrawal
- Toluene-based solvent

### Risk factors/associated conditions

- **Migraines:** AWS may be a type of aura, or a sensory warning of a coming migraine. Some doctors also believe AWS may be a sub type of migraines.
- **Infections:** AWS episodes may be an early symptom of the Epstein-Bar virus (EBV). This virus can cause infectious mononucleosis, or mono.
- **Genetics:** If a person has family history of migraines and AWS. you may have a higher risk for experiencing this rare condition.

### Pathophysiology

The temporo-parieto-occipital (TPO) junction connects the temporo-occipital, parieto-occipital, and temporo-parietal junctions is where visual and somatosensory information integrated to generate the inner and external representation of self.

Different complex notion may be perceived by using the patient if other regions of the brain are involved, evolving into complex somatosensory sickness. AIWS has been attributed to the migraineur cortical disorder of the non-dominant parietal lobe.

Studies have shown that electrical stimulation of the parietal lobe results in distortion in the size and length of the photo perceived. Decreased perfusion to the non-dominant parietal lobe for the duration of an attack ends in belief of symptoms. Generally signs of AIWS can precede or accompany a migraine attack.

### Clinical presentation

- Metamorphopsia - visual distortions
- Macropsia - seeing photographs larger than normal
- Micropsia - seeing pix smaller than everyday
- Achromatopsia - incapability to understand colour
- Teleopsia - seeing farther than normal
- Pelopsia - seeing closer than ordinary
- Visual hallucinations
- Partial/total body macro/micro matognosia
- Short-motion phenomenon
- Dysmorphias - lines and con tours performing wavy
- Feeling of de-awareness, depersonalization, somatopsychic duality
- Alteration in judgement of time.

Micropsia and Telopsia are the maximum not unusual signs and symptoms.

### Category

AWS is classified into 3 categories in line with the kind of perceptual problems.

The categories are:

- Kind A, in which issues are somesthetic, or sensory. (It follows the authentic definition of AWS. Wherein feeling as even though their body components are converting size.)
- Kind B, which influences visual senses. (It causes greater visual distortions of the encircling surroundings. Patient may additionally experience visible perception distortions)
- Kind C, that's a mix of sorts A and B. (: in this individual can perceive both the photo in their own body and that of other people or matters around them to be changing.)

### Prognosis

- Neurological and psychiatric session or intellectual fame examination.
- Recurring blood assessments
- MRI & CT. Test of brain
- Puppy (Positron Emission Tomography)
- Extra tests according to the signs and symptoms and their connected causes/ reasons with onset.
- Complete circle of relatives records series is required.

### Remedy/treatments

- AWS has no standardized treatment plan.
- Treatment revolves round migraine prophylaxis
- Low tyramine food regimen:
- Tyramine is a regarded migraine trigger, and docs have long advocated a low-tyramine weight loss plan to reduce the frequency or migraine attacks
- Studies have confirmed the association among dietary tyramine and migraines. So, low tyramine weight loss program to reduce migraine headaches is suggested.

- Tyramine can trigger nerve cells to launch norepinephrine, a hormone that increases blood pressure and heart charge.
- Drugs that prevent migraines:
- Anticonvulsants
- Antidepressants
- Calcium channel blockers
- Beta blockers
- Other treatments include Repetitive transcranial magnet stimulation (rTMS): It is an effective, drug free, non-invasive treatment. It influences electrical brain activity through a pulsed magnetic field.
- Visual distortion symptoms can be relieved by getting close to and looking at the objects in question, and by slowly proceeding to look at things further away.

Type	Symptoms	Facultative Symptoms
A	Somesthetic/sensory Distortion: Macrosomatognosia: feeling that body or body parts are growing taller or larger Microsomatognosia: feeling that body or body parts are shrinking. Aschematia: partial or total macrosomatognosia or microsomatognosia; Parenchymatic:	Derealization, depersonalization, somatopsychic duality, aberration in judgement of time.
	Visual perception Distortion Micropsia, where objects appear too small Macropsia, where objects appear too big Metamorphopsia, where aspects of shapes, such as height and width, appear inaccurate Pelopsia, where objects appear too close Teleopsia, where objects appear farther away than they are. Porropsia: when micropsia and telopsia appears at the same time and for the same object. Lilliputianism: people seem smaller than they would be in real life.	

Table 1

**Conclusion**

Alice in Wonderland syndrome is a rare phenomena in psychiatric field. It is commonly seen in children. In this article we have seen about causes, signs and symptoms and treatment. This review article will help us to understand about this perceptual phenomena [1-8].

**Bibliography**

1. Losada-Del Pozo R., et al. "Characteristics and evolution of patients with Alice in Wonderland syndrome". *Revue Neurologique* 53 (2011): 641-648.
2. George D and Bernard P. "Complex hallucinations and panic attacks in a 13-year-old with migraines: The Alice in Wonderland syndrome". *Innovations in Clinical Neuroscience* 10 (2013): 30-32.
3. Bernal Vañó E and López Andrés N. "A case of Alice-in-Wonderland syndrome probably associated with the use of montelukast". *Annals of Pediatrics (Barc)* 78 (2013): 127-128.
4. Kuo SC., et al. "Possible association between Alice in Wonderland syndrome and influenza A infection". *The Journal of Neuropsychiatry and Clinical Neurosciences* 24 (2012): E7-8.
5. Binalsheikh IM., et al. "Lyme neuroborreliosis presenting as Alice in Wonderland syndrome". *Pediatrics Neurology* 46 (2012): 185-186.
6. Nakaya H., et al. "Alice in Wonderland syndrome caused by the 2009 pandemic H1N1 influenza A virus". *The Pediatric Infectious Disease Journal* 30 (2011): 725-726.

7. Piessens P, *et al.* "Alice in Wonderland syndrome and upper airway obstruction in infectious mononucleosis". *B-ENT* 7 (2011): 51-54.
8. Blom JD, *et al.* "Treatment of Alice in Wonderland syndrome and verbal auditory hallucinations using repetitive transcranial magnetic stimulation: A case report with fMRI findings". *Psychopathology* 44 (2011): 337-344.