

# Medical Risk Information Page

Our Services are intended for general wellbeing and informational purposes only. If you think you may have a medical condition, you should seek advice from a qualified health care professional before using our Services. The following information is non-exhaustive and is not intended as medical advice.

## Overall Risks:

Some people can be at risk of photosensitive seizures without knowing it, or without having previously been diagnosed with epilepsy. It is estimated that 1 in every 4,000 people suffer from some form of photosensitive epilepsy [1] with 90% of patients having their first seizure before the age of 20 [2].

Photosensitive epilepsy is commonly passed down from parents (especially photosensitive mothers, whose children have a 25% chance of showing some signs of photosensitivity) [1]. Even people who have no history of seizures or epilepsy may have undiagnosed and photosensitive epilepsy without symptoms, that can cause “photosensitive epileptic seizures” while using this app.

If at any point, you experience involuntary movement (such as twitching), or convulsions, or muscle spasms, or an absence (loss of consciousness), or confusion, or a strong feeling of *déjà vu*, or strong dizziness or faintness, then stop using the App immediately and consult your doctor. Resume app use only on approval of your doctor.

If at any point while you are using the App, you do experience any of the above listed symptoms, the chances of this developing into a full convulsive seizure, can be very significantly reduced by covering of one eye and also by dropping the phone, or, if you are able, by turning the phone face-down.

## Photosensitive Epilepsy:

Photosensitive epilepsy is a type of epilepsy where seizures can be triggered by flashing light or changing patterns of light.

There are several photosensitive epilepsies (epilepsy syndromes in which seizures can be triggered by flashing light):

- Inherited or inheritable epilepsies are frequently photosensitive and include:
  - Juvenile myoclonic epilepsy
  - Primary generalised epilepsies
  - Juvenile absence epilepsy

- Childhood absence epilepsy
- Eyelid myoclonia with absences (Jeavons syndrome)
- Epilepsy with grand mal seizures on awakening
- Occipital lobe epilepsy is also frequently photosensitive

## Spontaneous Epileptic Symptoms:

Unexplained blackouts, as well as morning limb or head jerks and absences or lapses in awareness in the morning, leading to poor concentration, can all be signs of epilepsy that may be photosensitive.

These spontaneous epileptic symptoms are a good indicator of risk for photosensitive seizures in people who have no clear history of photosensitivity.

Even one episode of any of these symptoms is enough to be a significant risk factor and you should therefore not use this app if you have experienced any of these.

## Brain Injury:

You should not use this app if you have suffered any type of injury to the brain from either trauma, or medical conditions such as . a stroke, trauma, encephalitis, brain infection / abscess, severe meningitis, or **brain surgery**, especially if recent. This is because any type of injury to the brain can result in a susceptibility to epileptic seizures, which can be photosensitive. You should not use the App if you have **had** a brain tumour. Seizures are most likely to happen within the first few days following a brain injury, but a first seizure could occur up to 30 years or more later [9].

## Pregnancy:

You should not use this app during pregnancy, because seizures are more frequent in pregnancy and seizures can cause serious and potentially fatal damage to an unborn child [5].

## Tiredness:

You should not use this app after periods of sleep deprivation. Sleep deprivation significantly lowers seizure threshold increasing the likelihood of triggering seizures in susceptible individuals [3].

## Seizure-Triggering Drugs:

We recommend against using this app if you are currently taking medications which contain any of the following substances/drugs, because they can increase the chances of having seizures [6, 7, 8].

The list below is not meant as an exhaustive list and there may be other drugs that can increase the likelihood of photosensitive seizures. So, if you are taking any medication at all, you should check with your prescribing doctor that there is no risk of seizures with the drug you are taking.

Drugs used in chest / lung conditions:

- Aminophylline
- Theophylline

Antibiotics:

- Isoniazid
- Lindane
- Metronidazole
- Nalidixic acid
- Penicillins
- Ciprofloxacin

Anti-malarials:

- Mefloquine
- Chloroquine (also used for rheumatological conditions)

Antidepressants:

- Bupropion
- Clomipramine

Immunosuppressants:

- Chlorambucil
- Cyclosporine

Sedatives:

- Diphenhydramine (Nytol)
- Promethazine
- Other antihistamines

Opiates and Opioids:

- Morphine
- Other Opioids
- Codeine
- Fentanyl
- Pethidine (meperidine)
- Pentazocine
- Propoxyphene
- Tramadol

Stimulants:

- Amphetamines
- Cocaine
- Methylphenidate
- Phenylpropanolamine

Anti-nausea & anti-vertigo drugs:

- Cyclizine
- Prochlorperazine (stemetil)
- Domperidone

Anti-psychotics:

- Clozapine
- Chlorpromazine and other phenothiazines
- Haloperidol, benperidol, droperidol, melperone, azaperone (butyrophenones)

Non-steroidal anti-inflammatories (NSAIDs):

- Mefenamic acid
- Aspirin
- Diclofenac
- Indomethacin

Anticholinergics:

- Oxybutinin

Anti-spasticity drugs:

- Baclofen

Dementia drugs:

- Donepezil
- Rivastigmine
- Galantamine
- Memantine

Anti-migraine Triptan drugs:

- Sumatriptan (Imigran)
- Zolmitriptan (Zomig)
- Rizatriptan (Maxalt)
- Frovatriptan
- Naratriptan

Erectile dysfunction medications:

- Tadalafil (Cialis)
- Sildenafil (Viagra)

## Alcohol & Sedative Withdrawal:

Symptoms of alcohol-withdrawal typically start about 6 hours after stopping drinking, and frequently last for up to 6 days. These symptoms include epileptic seizures, anxiety, insomnia, headache, emotional lability, tremor, confusion, sweating, blurred vision [10].

Epileptic seizures are one of the commonest of these alcohol-withdrawal symptoms and indeed, can be the only symptom.

Alcohol-withdrawal seizures mainly occur during the early phase of withdrawal (with more than 90% occurring within 48 hours of stopping drinking). In more than 50% of alcohol-withdrawal seizures, there are other risk factors for epilepsy.

5% of cases of alcohol-withdrawal seizures develop into uncontrolled consecutive seizures (status epilepticus), which can result in death or brain damage.

After very prolonged bouts of drinking, alcohol-withdrawal symptoms, including seizures, may last for up to 2 weeks after stopping drinking and may also include visual and auditory hallucinations and illusions [10].

Very similar symptoms, including seizures, can occur when withdrawing from sedatives if they are stopped suddenly after prolonged use [11].

## Mental Health Conditions:

You should not use this app if you are experiencing any symptoms associated with psychosis (which may include seeing things or hearing things that other people do not). This is because

stroboscopic light can induce hallucinatory experiences which may be distressing if you are already suffering with psychosis.

You should not use this app if you experience panic attacks, have been diagnosed with a dissociative disorder or experience severe episodes of dissociation.

Panic attacks are very sudden and unexpected episodes of anxiety that worsen very quickly. They can be associated with feelings of terror, fear of dying and dissociation (feelings of unreality).

Dissociative disorders can include depersonalisation-derealisation disorder (feelings of unreality about yourself, your body and/or your surroundings), dissociative amnesia (gaps in your memory about events or personal information that is related to trauma or severe stress and is more than 'normal' forgetting) and dissociative identity disorder (having two or more different personalities).

Dissociation can also occur in Post-traumatic Stress Disorder (PTSD) when people can experience 'flashbacks' - the intense memory, or experience of reliving, traumatic experiences. Stroboscopic light may trigger feelings of anxiety and/or dissociation in people who are prone to these experiences.

If you are experiencing strong suicidal thoughts, feelings or impulses, we do not recommend using Lumenate but instead advise you to seek help from friends, family and a healthcare professional.

## Still Have Questions?:

If you've read this and you still have questions, contact us at anytime at [support@lumenategrowth.com](mailto:support@lumenategrowth.com).

If you've got any doubt, only use the app on approval from your doctor.

## References:

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