

Nutmeg-induced acute psychosis in an adolescent: a case report

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Case Report

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Abstract

Background

Nutmeg (*Myristica fragrans*) active compounds partially metabolize into amphetamine derivatives with hallucinogenic properties. Acute nutmeg intoxication can induce psychotic states, yet this psychotomimetic potential remains largely unrecognized in clinical practice. We report the first case of nutmeg-induced acute psychosis in an adolescent, highlighting the diagnostic challenges and the role of individual vulnerability as a modulating factor.

Case presentation

A 15-year-old male with longstanding anxiety, depressive symptoms, early suicidal episodes, and dissociative phenomena ingested approximately 30 grams of ground nutmeg in a single dose after exposure to online content promoting it as a natural weight loss aid. Over the following days, he developed derealization, visual hallucinations, thought disorganization, and persecutory ideation. At emergency presentation fifteen days later, physical examination showed moderate sinus tachycardia; ECG, blood tests, and a full toxicological screen were unremarkable, as no specific assay for nutmeg metabolites is available in routine practice. He was diagnosed with an acute delusional episode (DSM-5) precipitated by nutmeg intoxication on a vulnerable psychiatric background, treated with cyamemazine then risperidone, and hospitalized in a child and adolescent psychiatry unit. Discharge occurred against medical advice after approximately two weeks, followed by treatment discontinuation and refusal of outpatient follow-up.

Conclusions

This case documents a nutmeg-induced acute psychosis and alerts clinicians – emergency physicians, pediatricians, and psychiatrists – to the psychotomimetic potential of this common domestic substance. As with cannabis or amphetamines, individual vulnerability modulates the clinical expression without diminishing the causal role of the substance.

1. Introduction

Myristica fragrans (nutmeg) has been known for several centuries for its psychoactive properties, documented as early as the sixteenth century [1]. Its principal active constituents – myristicin, elemicin, and safrole – possess hallucinogenic and amphetamine-like properties, attributable to their partial hepatic metabolism into amphetamine derivatives such as MDMA and TMA [2–4].

Clinically, acute nutmeg intoxication may produce both somatic signs (tachycardia, nausea, abdominal pain, skin flushing, dry mouth, mydriasis) and neuropsychiatric features (confusion, agitation, derealization, visual hallucinations, transient toxic delirium) [5–7]. The clinical presentation can sometimes mimic an anticholinergic syndrome, complicating the differential diagnosis [8]. Several cases of acute psychosis associated with nutmeg have been reported in the psychiatric literature [6, 7].

Voluntary nutmeg use among adolescents has recently resurged, notably in the context of viral social media phenomena such as the "*Nutmeg Challenge*", which emerged in 2020–2021 and prompted young people to film themselves ingesting large doses in pursuit of hallucinogenic or weight loss effects [9]. This phenomenon illustrates the intersection of digital influence, risk-taking bodily experimentation, and psychic vulnerabilities in adolescence. Available data on adolescents are extremely limited, and virtually all published reports on minors involve accidental intoxications or a single case of one-off experimentation in a 16-year-old, without in-depth exploration of the associated psychopathology and psychiatric disorders [10]. These practices are part of a broader phenomenon in which online content shapes adolescent health behaviours, including the dissemination of pseudoscientific beliefs about 'natural' substances presented as accessible and harmless [11]. To our knowledge, no case to date has described in detail a voluntary nutmeg intoxication in an adolescent associated with pre-existing psychic vulnerability, the subsequent onset of a severe acute delusional episode, and an explicitly social media-driven context of weight loss seeking.

2. Case Presentation

2.1. Patient information

The patient is a 15-year-old male adolescent living with both parents, a 13-year-old sister, and a 12-year-old brother. He was enrolled in the first year of secondary school (*second*) at a general high school. His early development was notable for a language delay requiring speech therapy between the ages of 7 and 14. Psychiatrically, he had been followed since childhood at a community mental health center (*Centre Médico-Psychologique*, CMP) for anxiety and behavioral difficulties. At the age of 7, in the context of a temporary parental separation, two suicidal episodes were reported: a defenestration attempt prevented by his mother, and an episode in which he threatened himself with a knife, stating that he wanted to "sacrifice himself for his brother and sister".

2.2. Psychosocial background and recent history

Since the start of the 2024 school year, the adolescent had been completely out of school, in a context of panic attacks, anxious ruminations, and depressive cognitions (guilt, devaluation, abulia, anhedonia), combined with a reversed sleep–wake cycle and progressive social withdrawal. He also described episodes of derealization and depersonalization. During this period, he alternated between the parental home and his maternal grandparents' home, which he had moved to in order to, in his own words, "escape bad company". In February 2025, he returned to live full-time with his parents. At that time, his BMI was slightly above the normal range for his age and sex, associated with negative body perception and a sense of loss of control over his appearance. He concurrently developed excessive nocturnal weight training — performing his workouts at around three in the morning — and adopted a restrictive diet with an explicit goal of losing weight ("lose ten kilos").

2.3. Intoxication episode and clinical course

In mid-June 2025, the patient ingested in a single dose the entire contents of a jar of ground nutmeg from the family kitchen, approximately 30 grams dissolved in water according to the patient's account. He stated that he had done so for weight loss purposes, after being exposed on social media (TikTok and YouTube) to content promoting the slimming properties of this spice. In the hours following ingestion, he progressively developed neuropsychiatric symptoms: a sense of strangeness, derealization and depersonalization, psychomotor slowing, nocturnal visual hallucinations, and thought disorganization. He reported existential delusional ideation: *"I don't know whether I died when I took the nutmeg. Maybe I am dead."*

Persecutory ideation towards those around him also emerged ("you always have to be on your guard — someone can stab you in the back"). Aware of the unusual nature of his symptoms, the patient conducted searches online and identified, via a conversational AI assistant (ChatGPT), a possible link between his symptoms and nutmeg ingestion.

2.4. Clinical assessment and emergency management

Fifteen days after ingestion, the patient presented to the pediatric emergency department accompanied by his mother, to whom he had disclosed his somatic symptoms: vomiting, diarrhea, and gastric pain. He then reported the massive nutmeg ingestion. Physical examination revealed moderate tachycardia with no other signs of severity. The ECG showed no documented repolarization abnormality. Standard blood tests returned no clinically significant abnormality. A full toxicological screen was performed and returned negative for all substances tested: benzodiazepine, cannabis, alcohol, amphetaminic, opioids, cocaine. It should be noted that no specific assay for nutmeg compounds (myristicin, elemicin, safrole) or their amphetamine metabolites (MMDA, TMA) was performed, as no standardized technique is available in routine clinical practice for these substances. Psychiatric assessment revealed psychic disorganization, impaired reality testing, and brief visual and auditory hallucinatory phenomena. No active suicidal behavior was reported. Treatment with cyamemazine (Tercian®) 25 mg/day was initiated on the same day — a choice justified by its sedative and anxiolytic profile, appropriate for first-line management in adolescents — alongside a pediatric follow-up appointment. Given the intensity of the perceptual and dissociative disturbances, inpatient child and adolescent psychiatric care was proposed.

2.5. Diagnosis and outcome

The diagnosis retained was that of acute nutmeg intoxication having precipitated a psychotic decompensation on a pre-existing anxious-depressive background.

The patient was admitted to an adolescent inpatient child and adolescent psychiatry unit at the end of July 2025. During hospitalization, he presented with an overt psychiatric clinical picture: structured delusional speech, acoustic-verbal and visual hallucinations. A diagnosis of brief psychotic disorder was made according to DSM-5 criteria. Antipsychotic treatment with risperidone was initiated at a low dose and progressively increased. After approximately fifteen days of hospitalization, the family requested discharge against medical advice. As the patient is a minor, no compulsory treatment measures were applicable in this context; the parental decision prevailed. No suicidal ideation was documented at

discharge. Subsequently, the patient discontinued his treatment independently, failed to attend scheduled outpatient appointments, and maintained active opposition to care.

2.6. Follow-up and Outcomes

The patient reported fatigue attributed to risperidone, which contributed to his decision to discontinue medication following discharge. No other adverse effects were documented during hospitalization. Treatment discontinuation was driven by a combination of perceived side effects and the patient's own assessment that, in the absence of visible symptoms, pharmacological treatment was no longer necessary. At a follow-up appointment in September 2025, obtained after the treating physician's insistence, the patient presented without visible psychotic symptoms, no behavioral disturbance, improved sleep, absence of hallucinations, and expressed a wish to return to school. However, he had discontinued all medication since discharge in mid-August 2025, attended only approximately half of scheduled outpatient appointments, and remained avoidant of care. This partial clinical recovery is encouraging, but the underlying psychiatric vulnerability, absence of pharmacological treatment, and inconsistent therapeutic engagement warrant continued vigilance regarding the risk of relapse.

2.7. Patient Perspective

The patient acknowledged that hospitalization had been necessary at the time, but found it difficult due to separation from his family. He discontinued medication once he felt recovered, considering it no longer necessary given the absence of symptoms. When approached about this case report, he volunteered to contribute and returned to the following appointment with additional details about the episode.

The clinical timeline of the case is summarized in Table 1.

Table 1

— **Clinical timeline of the case** *Clinical course of a 15-year-old adolescent with pre-existing anxious-depressive vulnerability who developed an acute psychotic episode following a single massive ingestion of nutmeg for weight loss purposes, in the context of exposure to social media content.*

Period	Main clinical and contextual events
Ages 6–7	Language delay → speech therapy. Two early suicidal episodes in the context of family conflict and temporary parental separation. Start of follow-up at the CMP.
Childhood – adolescence	Relational and academic difficulties, anxious traits and social withdrawal. Ongoing child psychiatric follow-up.
Start of 2024 school year (age 15)	Complete school dropout, severe anxiety, ruminations, guilt, abulia, anhedonia. Experiences of derealization and depersonalization.
February 2025	Return to parental home. Reversed sleep–wake cycle. Excessive nocturnal weight training and restrictive diet with weight loss goal. BMI slightly above normal range for age.
Mid-June 2025	Single massive ingestion of nutmeg (approximately 30 g) for weight loss purposes, following exposure to social media content.
Days following ingestion	Progressive onset of neuropsychiatric symptoms: derealization, depersonalization, nocturnal visual hallucinations, thought disorganization, persecutory ideation.
Fifteen days after ingestion	Pediatric emergency presentation. Moderate sinus tachycardia. Normal ECG. No significant blood test abnormality. Full toxicological screen negative (Benzodiazepine, cannabis, amphetaminic, opioids, cocaine). No routine nutmeg-specific assay available. Cyamemazine 25 mg/day initiated. Pediatric follow-up.
End of July 2025	Inpatient child and adolescent psychiatry admission. Overt psychotic symptoms: delusional speech, acoustic-verbal and visual hallucinations. Diagnosis: brief psychotic disorder (DSM-5). Risperidone initiated at 1 mg/day, increased to 2 mg/day.
After ~ 15 days	Discharge against medical advice at family's request (patient a minor). No suicidal ideation at discharge. Patient independently discontinued treatment. Did not attend outpatient appointments. Active opposition to care.

{Table 1}

3. Discussion

3.1. Diagnostic, toxicological, and pathophysiological considerations

Nutmeg intoxication poses specific diagnostic challenges, particularly in psychiatry, due to the absence of specific biological markers and the variability of clinical presentations. The principal active compounds of nutmeg — myristicin, elemicin, and safrole — undergo partial hepatic metabolism into

amphetamine derivatives, notably 3-methoxy-4,5-methylenedioxyamphetamine (MMDA) and trimethoxyamphetamine (TMA) [2]. These substances are known for their hallucinogenic, sympathomimetic, and dissociative effects, which account for the combination of somatic and neuropsychiatric signs observed in acute intoxications. It should be noted that MMDA, which is structurally distinct from MDMA, is not detected by standard immunoassay toxicological screens; this explains why the toxicological screen may return negative despite genuine nutmeg intoxication, and underscores the central role of clinical history in establishing the diagnosis. Clinically, nutmeg intoxication can mimic several presentations: anticholinergic syndrome, acute confusional state, brief psychotic disorder, or substance-induced psychotic disorder. Somatic signs reported in the literature include tachycardia, mydriasis, dry mouth, skin flushing, nausea and vomiting, and abdominal pain, without consistent biological abnormalities [1–3]. In the present case, physical examination revealed moderate tachycardia with no signs of severity, and investigations performed in the emergency department showed no specific biological abnormalities, including hepatic or muscular markers, which is consistent with published data. This absence of specific biomarkers places clinical history and chronological reconstruction of events at the center of the diagnostic process.

The principal diagnostic challenge in psychiatry is to distinguish acute toxic psychosis (substance-induced psychotic disorder according to international classifications) from decompensation of a pre-existing latent psychotic disorder — a distinction that is crucial as it affects both diagnosis and treatment. According to DSM-5, the diagnosis of substance-induced psychotic disorder requires the onset of psychotic symptoms during or shortly after exposure to a substance capable of producing them, associated with a compatible time course and an expected resolution following discontinuation [12]. In the present case, the latency period between the massive nutmeg ingestion and the onset of psychotic symptoms suggests a probable causal role of the substance.

Pre-existing psychiatric vulnerability, as consistently documented with cannabis, amphetamines, and psychedelics, modulates the clinical expression and severity of substance-induced psychosis without diminishing the causal role of the substance. In the present case, early psychiatric history, dissociative episodes, and marked anxious-depressive symptoms represent vulnerability factors that shaped the clinical trajectory. The persistence and intensification of psychotic symptoms beyond the acute intoxication phase, necessitating antipsychotic treatment and specialist inpatient care, reflects the amplifying effect of this vulnerability on a nutmeg-induced psychotic process. This hypothesis is consistent with existing models of adolescent psychosis, which suggest a complex interaction between biological, developmental, environmental, and toxicological factors [13]. Similar findings have been observed with other recreational substances such as cannabis and amphetamines [14, 15]. These substances may unmask, precipitate, or exacerbate latent psychotic illness in adolescents, seemingly through their profound impact on the developing brain. The differential diagnosis includes other acute intoxications capable of inducing psychotic or confusional states, such as amphetamines, MDMA, or certain synthetic substances. In the present case, the absence of any declared use or positive toxicological findings, the coherence of the account, and the temporal concordance all point towards the responsibility of nutmeg. This observation nevertheless highlights the limitations of standard

toxicological tools in the face of substances rarely screened for in routine practice, and underscores the need for heightened clinical vigilance towards atypical patterns of substance use.

3.2. Body, control, and adolescent vulnerability: the role of social media

Adolescence represents a period of profound reorganization of body image, closely tied to pubertal transformation and individuation processes. The construction of a coherent self-representation — including the body — is a central developmental task of this period, and one that is particularly vulnerable to external influences [16]. In adolescent boys, concerns increasingly focus on muscularity and body composition, in a cultural context that valorizes a simultaneously lean and muscular body ideal [17, 18]. In their most severe forms, these preoccupations can evolve into muscle dysmorphia, associated with anxiety, depression, and restrictive eating behaviors [19]. In the present case, the adolescent expressed marked body dissatisfaction, a weight loss goal of ten kilograms, compulsive nocturnal weight training, and dietary restriction. These elements are consistent with a body dysmorphic preoccupation with a weight and muscular orientation, arising on a pre-existing anxious-depressive background. Several studies have highlighted the link between eating disorder-type symptoms and emerging psychotic states, with some authors proposing that restrictive and body-controlling behaviors may represent prodromal manifestations or defensive equivalents in the face of threatening psychic disorganization [20, 21]. Nutmeg occupies a particularly symbolic position in this context. As a domestic spice, present in the family kitchen, it is perceived as natural, accessible, and safe — in contrast to illicit psychoactive substances. This status as a "natural" substance contributes to risk minimization and to the illusion of possible control: a means of regaining mastery over the body and its transformations without resorting to what might be experienced as an outright transgression. This dynamic is consistent with observations on self-medication in adolescence, where substance use may represent a clumsy and risky attempt to regulate intolerable internal states: anxiety, derealization, and a sense of loss of control [22]. This recourse is also embedded within a digital environment that played a direct triggering role. The *Nutmeg Challenge*, which emerged on TikTok and other platforms in 2020–2021, saw adolescents ingesting large quantities of nutmeg in the hope of achieving a natural psychoactive effect [9]. In the present case, the declared motivation was not euphoria but weight loss — a variant of this phenomenon that illustrates how pseudoscientific beliefs about the virtues of "natural" substances circulate and transform online, adapted to the individual concerns of each user. Studies have shown that peaks in Google searches for ingestion challenges coincide temporally with increases in intoxication reports to poison control centers, highlighting the reality of digital contagion as a public health vector. This case underscores the need for systematic clinical identification of substance use originating from the digital space, particularly among adolescents followed in child and adolescent psychiatry for anxious-depressive disorders or presenting with body image concerns. Health surveillance systems — such as the TREND programme of the OFDT¹ (French Monitoring Centre for Drugs and Drug Trends) in France, in conjunction with European data from EUDA² (European Union Drugs Agency) and the Centers for Pharmacodependence Evaluation and Information (CEIP) — are essential tools for detecting the emergence of new viral patterns of substance

use. Digital health education, integrated into child and adolescent psychiatric consultations, could allow clinicians to explore patients' social media use and the content to which they are exposed, particularly when such content concerns the body, diet, or substances.

3.3. Strengths & limitations

This case report has several strengths. It provides a detailed longitudinal description of a rare and underreported clinical presentation, combining acute nutmeg intoxication, pre-existing psychiatric vulnerability, and social media-driven substance misuse in an adolescent. The chronological documentation of symptoms, clinical findings, and therapeutic interventions allows for a rigorous causal analysis. The inclusion of the patient's own statements adds ecological validity to the clinical narrative. Several limitations must be acknowledged. First, this is a single case report, and no generalization can be drawn from an individual observation. Second, no specific biological marker for nutmeg intoxication is available in routine practice, making definitive toxicological confirmation impossible. Third, the patient's account of his substance use relied entirely on self-report, which may be subject to recall bias or incomplete disclosure. Fourth, the early discharge against medical advice and inconsistent follow-up precluded a complete assessment of long-term outcomes. Finally, the pre-existing psychiatric vulnerability could not be fully characterized in the absence of formal structured diagnostic assessment prior to the acute episode.

4. Conclusion

This case documents a nutmeg-induced acute psychosis in an adolescent and draws clinicians' attention to the psychotomimetic potential of this widely available domestic substance. Nutmeg, through the partial metabolism of myristicin into amphetamine derivatives, is capable of inducing frank psychotic states. Pre-existing psychiatric vulnerability, consistently observed with cannabis, amphetamines, and psychedelics, modulates the severity of clinical expression without diminishing the causal role of the substance. Clinicians — emergency physicians, pediatricians, and psychiatrists — should systematically consider nutmeg intoxication in the differential diagnosis of acute psychosis, particularly in adolescents, and should inquire about exposure to social media content promoting the misuse of "natural" substances.

Declarations

Ethics approval and consent to participate

This case report does not involve a clinical trial, experimental intervention, or prospective data collection. In accordance with French legislation (Loi Jardé), individual case reports based on routine clinical care do not require formal ethics committee (CPP) approval. All clinical data were collected as part of standard psychiatric care. Patient confidentiality was maintained throughout, and certain identifying details — including specific dates and locations — have been modified to prevent patient identification, without affecting the clinical or scientific content of this report.

Consent for publication

Written informed consent for publication of this case report was obtained from the patient's legal guardians (parents). As the patient is a minor (aged 15 years), parental consent was obtained in accordance with applicable regulations. The patient's assent was also sought. A copy of the consent form is available for review by the Editor-in-Chief upon request.

Competing interests

The authors declare that they have no competing interests.

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Author Contribution

T.M. was the primary clinician involved in the care of the patient, collected clinical data, and drafted the manuscript. T.L. contributed to clinical assessment and critically revised the manuscript. O.T. supervised the clinical management and provided critical revision of the manuscript for important intellectual content. All authors read and approved the final manuscript.

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Availability of data and materials

The data that support the findings of this case report are not publicly available due to patient confidentiality constraints. Anonymized data may be made available upon reasonable request to the corresponding author, subject to applicable privacy regulations.

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Footnotes

1. <https://www.ofdt.fr/>
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