

Thought Disorder

- Intracranial directed connectivity links subregions of the prefrontal cortex to major depression
- Multiregional representations of intertemporal decision making in human single neurons
- Adaptive trial for the treatment of depressive symptoms associated with concussion using accelerated intermittent theta burst stimulation (ADEPT): rationale, design and methods
- Molecular basis of the therapeutic effect of butyrate in glioblastoma revealed by in vitro and in silico approach
- Inflammatory, White Matter, and Neurodegenerative Mechanisms in Fluid Ability Decrements in Chronic Mild-to-Moderate Traumatic Brain Injury
- Neural and computational mechanisms of loss aversion in smartphone addiction
- The Role and Mechanisms of G protein-coupled receptors in Parkinson's disease
- Clinical Reasoning: A 64-Year-Old Man With Confusion, Nausea, Seizure, and Fever

Thought disorder is a clinical term referring to **disruptions in the organization, expression, or logic of thought**, typically revealed through a person’s speech and writing. It is a hallmark symptom in various **psychiatric** and some **neurological conditions**.

Definition

Thought disorder refers to a disturbance in the form (structure) or content of thinking, leading to impaired communication or abnormal beliefs. It is most often associated with schizophrenia-spectrum disorders but also occurs in mood disorders, neurodegenerative diseases, and structural brain lesions.

Types of Thought Disorder

1. Formal Thought Disorder (FTD)

Involves abnormalities in the **form** or **process** of thinking, typically assessed by observing speech patterns.

Symptom	Description
Derailment (loose associations)	Shifting from one idea to another with little logical connection.
Tangentiality	Answers diverge from the topic and never reach the point.
Incoherence (word salad)	Speech becomes incomprehensible due to disorganized grammar and logic.
Neologisms	Creation of new, idiosyncratic words.
Clang associations	Linking words by sound rather than meaning.
Perseveration	Repeating the same idea or phrase despite topic change.

2. Thought Content Abnormalities

Reflect distorted or false beliefs.

Type	Example
Delusions	Fixed false beliefs (e.g., persecutory, grandiose).
Paranoia	Belief that others intend harm.
Magical thinking	Belief that thoughts influence reality in supernatural ways.

Neurological and Neurocognitive Context

Though classically psychiatric, thought disorders can arise in neurological conditions such as:

- **Frontal lobe lesions** – executive dysfunction and disorganized thought.
- **Temporal lobe epilepsy** – may include paranoia or hyperreligiosity.
- **Cerebellar dysfunction** – part of the *Cerebellar Cognitive Affective Syndrome* (CCAS), also called **“dysmetria of thought”**.

Summary

Thought disorder is a disruption in the normal pattern of thinking, often observed as disorganized, illogical, or incoherent speech. It reflects abnormalities in how ideas are generated, connected, and communicated, and may signal underlying psychiatric or neurological disease.

Considering Chiari Malformation Type I Decompression for Disorders of Thought

In a [editorial commentary](#) Annie I. Drapeau, and Anthony M. Kaufmann, from the University of Manitoba, [Winnipeg](#) published in the [Journal of Neurosurgery](#) to critically reflect on the [burgeoning hypothesis](#) that [Chiari malformation type I](#) (CM-I) may contribute to [cognitive](#) and [affective dysfunction](#) and that [posterior fossa decompression](#) (PFD) might yield therapeutic [benefits](#) beyond relief of pressure-related symptoms. The [authors](#) caution against the premature [endorsement](#) of PFD for neuropsychiatric complaints in CM-I patients without classic decompression indications. They underscore the need for rigorous control of confounding variables, the inclusion of control groups, and standardized methodologies in future research. There is skepticism about the interpretation of postoperative cognitive and affective improvements due to potential placebo effects, resolution of pain, and medication cessation, rather than direct pathophysiological relief ¹⁾

Critical Review

This editorial is a necessary tempering of enthusiasm following Henry et al.'s exploratory prospective study on cognitive and affective changes post-PFD in CM-I. The authors provide a methodologically grounded critique, emphasizing the dangers of misattributing causality to associative findings, especially in the absence of a control group or rigorous baseline psychiatric profiling ²⁾

The editorial's strength lies in its careful parsing of psychometric data, awareness of selection bias, and cautious evaluation of the surgical implications. It deftly illustrates how incidental radiological findings (like CM-I) might spur unwarranted interventions without solid mechanistic links. The comparison to microvascular decompression outcomes in cranial nerve disorders is apt and effective

in conveying the cautionary message.

Its limitations are those of the editorial format—it does not provide new data but rather serves to contextualize existing results. However, as a scholarly commentary, it is exemplary in tone, scope, and scientific restraint.

Final Verdict: An intellectually rigorous and judicious editorial that should guide neurosurgeons and researchers in critically appraising speculative surgical indications. A must-read for those exploring neuropsychiatric extensions of CM-I pathology.

Takeaway for Neurosurgeons: Posterior fossa decompression should not be pursued for cognitive or affective complaints in CM-I absent traditional surgical indications. Await stronger evidence.

Bottom Line: The cerebellum's cognitive role is intriguing, but current evidence does not justify PFD in asymptomatic CM-I patients with only psychiatric symptoms.

Rating: 8.5/10

Title: Considering Chiari Malformation Type I Decompression for Disorders of Thought

Citation: Drapeau AI, Kaufmann AM. Considering Chiari malformation type I decompression for disorders of thought. J Neurosurg. 2025 Jul;143(1):1-3. doi:10.3171/2024.10.JNS242051.

Publication Date: February 21, 2025

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Categories: Editorials, Chiari Malformation, Cerebellar Neuroscience

Tags: Chiari malformation type I, posterior fossa decompression, cognitive dysfunction, affective disorders, cerebellar function, neurosurgical indications, editorial, neuropsychology, depression, anxiety

1)

Drapeau AI, Kaufmann AM. Editorial. Considering Chiari malformation type I decompression for disorders of thought. J Neurosurg. 2025 Feb 21;143(1):1-3. doi: 10.3171/2024.10.JNS242051. PMID: 39983123.

2)

Henry LC, McDowell MM, Stephenson TL, Crittenden JB, Byrd AL, Fernández-de Thomas RJ, Chang YF, Nowicki KW, Mantena R, Strick PL, Friedlander RM. Predecompression and postdecompression cognitive and affective changes in Chiari malformation type I. J Neurosurg. 2025 Feb 21;143(1):4-12. doi: 10.3171/2024.8.JNS241363. PMID: 39983117.

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