# DIHEXA | Angiotensin IV Analog | Cognitive Enhancement & Synaptogenesis

## What Is Dihexa?

Dihexa (N-hexanoic-Tyr-Ile-(6) aminohexanoic amide) is a synthetic peptide derived from angiotensin IV — a naturally occurring peptide in the renin-angiotensin system that plays a significant role in brain function, learning, and memory consolidation.

It was developed by researchers at Washington State University, where it was found to have extraordinary pro-cognitive effects, particularly in the context of age-related cognitive decline and neurodegenerative disease models.

*Dihexa works by powerfully amplifying the HGF/MET signaling pathway in the brain — a pathway responsible for building and maintaining new synaptic connections, the physical substrate of learning and memory.*

## Mechanism of Action

### HGF / MET Signaling — The Synaptogenesis Pathway

Hepatocyte Growth Factor (HGF) and its receptor MET are critical regulators of neuronal growth, synapse formation, and cognitive repair in the brain. Dihexa works by:

- Potentiating HGF/MET signaling with extraordinary magnitude
- Driving the formation of new dendritic spines — the physical sites of synaptic connection
- Stimulating synaptogenesis — the creation of new synapses between neurons
- Enhancing hippocampal neuroplasticity, the brain's capacity to rewire and adapt
- Supporting the repair and restoration of damaged neural circuits

### Why This Matters for Cognitive Function

Learning and memory depend on the number, strength, and density of synaptic connections in the brain. Aging, neuroinflammation, TBI, and neurodegenerative disease all reduce synaptic density. Dihexa directly counteracts this loss by promoting new synapse formation at the structural level.

### Comparison to BDNF

Brain-Derived Neurotrophic Factor (BDNF) is the most studied pro-cognitive growth factor — essential for synaptic plasticity, learning, and memory. Dihexa is estimated to be up to 10 million times more potent than BDNF at promoting new synaptic connections. Crucially, unlike BDNF itself, Dihexa is small enough to cross the blood-brain barrier orally.

## Key Benefits

**→ Powerful Synaptogenesis**

Directly stimulates the formation of new synapses and dendritic spines in the hippocampus and cortex — rebuilding the structural architecture of memory and learning at the cellular level.

**→ Memory Enhancement**

Preclinical research demonstrated reversal of cognitive deficits equivalent to Alzheimer's disease in animal models. Subjects recovered spatial learning and memory retention comparable to healthy controls.

**→ Neuroplasticity & Brain Rewiring**

Supports the brain's capacity to form new neural pathways — relevant for recovery from injury, adaptation after illness, and sustained cognitive performance as we age.

**→ Neuroprotection**

HGF/MET signaling supports neuronal survival, reduces excitotoxic damage, and protects against the programmed cell death that occurs in neurodegenerative conditions.

**→ Cognitive Clarity & Mental Sharpness**

Patients report improved working memory, faster processing speed, sharper recall, and enhanced ability to focus and retain complex information.

**→ Blood-Brain Barrier Penetration**

Unlike BDNF and most neuroprotective growth factors, Dihexa is small enough to cross the blood-brain barrier via oral or topical routes, enabling non-injectable delivery.

**→ TBI & Post-Illness Brain Recovery**

The HGF/MET pathway is specifically activated in response to brain injury and neuroinflammation. Dihexa amplifies this natural recovery signal, potentially accelerating rehabilitation.

## What You May Notice

Dihexa's effects are cumulative and build over weeks of consistent use. Patients commonly report:

- Noticeably sharper short-term memory and recall
- Improved ability to retain and process new information
- Enhanced focus, mental clarity, and cognitive stamina
- Faster verbal and mental processing speed
- Improved mood and motivation alongside cognitive gains
- Greater ease with complex tasks, planning, and multi-step thinking

***Start low and increase gradually — effects are powerful and cumulative.***

## Clinical Applications

- Age-related cognitive decline and memory loss
- Alzheimer's disease and early dementia support
- Traumatic brain injury (TBI) recovery
- Post-stroke cognitive rehabilitation
- ADHD and executive function support
- Brain fog from chronic illness, mold/CIRS, or post-viral conditions
- High-performance cognitive optimization
- Neuroplasticity support during learning-intensive periods

## Who May Benefit Most

- Patients with early or moderate cognitive decline
- Those recovering from TBI, stroke, or neurological illness
- Patients with post-COVID or CIRS-related brain fog
- High-achieving professionals seeking cognitive optimization
- Anyone with suboptimal memory, focus, or mental processing speed
- Patients on longevity protocols wanting comprehensive brain support

# Dosing & Administration

| Route | Starting Approach | Frequency | Clinical Notes |
|---|---|---|---|
| **Oral capsule** | Start at lowest available dose; titrate slowly based on response | Daily or as directed by provider | Most convenient route. Crosses the blood-brain barrier orally. Titrate slowly — effects are powerful, long-lasting, and cumulative. Do not increase dose rapidly. |
| **Topical (transdermal)** | Applied to thin-skinned areas (wrist, inner arm) | Daily or as directed by provider | Useful for patients preferring non-oral delivery. Absorption is carrier-dependent. Provider will determine appropriate formulation. |
| **Subcutaneous injection** | Provider-directed dosing only | Per provider protocol | Most direct systemic delivery. Reserved for cases where precise dosing control is needed or other routes are not preferred. |

*Dose individualized by your provider | Start low and titrate gradually — effects are cumulative*

## Safety & Important Considerations

Dihexa is among the most potent pro-cognitive compounds studied. Respect for its potency is essential:

- Always start at the lowest effective dose and increase slowly — effects accumulate over time
- Do not increase dose rapidly; cognitive and mood effects can be intense at higher doses
- Some patients report vivid dreaming or intensified mental activity during early use — this generally normalizes
- Not recommended during pregnancy or breastfeeding
- Use with caution in patients with a history of mania, psychosis, or severe anxiety
- Long-term safety data in humans is still emerging — use under provider supervision
- Monitor for mood changes, sleep disturbance, or overstimulation during titration

## Compatibility with Other Protocols

Dihexa integrates powerfully into cognitive and longevity protocols:

- Pairs with Semax and Selank for a comprehensive brain health and neuroprotective stack — each targeting different pathways
- Complements Epithalon and Pinealon for full cognitive longevity support — cellular reset plus synaptogenesis
- Synergistic with FOXO4-DRI for patients targeting both senescent cell burden and neural regeneration
- Works alongside NAD+ precursors (NMN, NR) and 5-Amino-1MQ to support the metabolic energy demands of active synaptogenesis
- Compatible with GHK-Cu for patients seeking both neuroprotection and systemic tissue regeneration

At Larrea Naturopathic Medicine, we prescribe peptides exclusively through **CLIA-certified, FDA-registered 503A compounding pharmacies.**

Every batch undergoes independent third-party testing for purity, potency, and safety. Our pharmacies are LegitScript-certified and held to rigorous regulatory standards.