

What Semax is

A seven-amino-acid peptide built from a fragment of the stress hormone ACTH, designed in Moscow in the 1980s and registered in Russia as nasal drops for stroke, cognitive complaints, and optic nerve disease. In rats it raises BDNF in the brain. Sold here as a focus and memory spray, and as a vial.

RUSSIAN LABEL	0.1% drops, 200–2,000 mcg per dose, up to 5,000 mcg a day, 3–14 days; 1% drops for acute stroke
FORMS HERE	30 mg spray bottles (\$77–\$130); 5 and 10 mg vials (\$45–\$85); imported drops
STATUS	Approved only in Russia. Advisory committee voted 8–5 in July 2026 to recommend compounding, against FDA staff; no rulemaking
ANTI-DOPING	Not named; the SO catch-all leaves it unsettled. Treat as at risk

APPROVED SOMEWHERE IS NOT THE SAME AS TESTED

The Russian registration is real. It rests on open, unblinded studies, most by the inventors, none of which FDA's reviewers could use.

This pamphlet is for adults using or being offered Semax. It is a summary of the label and the published record, not medical advice.

Before the first spray, ask

- ☐ What am I trying to change, and how will we know?
- ☐ Do I know no blinded trial of Semax exists anywhere?
- ☐ Free base, acetate, or N-acetyl? Does the seller say?
- ☐ By nose or by injection? Injection has no human data.
- ☐ What does one spray, drop, or unit deliver?
- ☐ Anticoagulants, stimulants, seizures, anxiety, or psychosis?
- ☐ Has FDA published a rule since July 2026? If not, nothing changed.

SOURCES

1. U.S. Food and Drug Administration. Briefing document, Pharmacy Compounding Advisory Committee meeting, July 23–24, 2026: Semax (free base) and Semax acetate. Memorandum dated May 11, 2026.
2. U.S. Food and Drug Administration. Pharmacy Compounding Advisory Committee, July 24, 2026: FDA presentation slides (emideltide, epitalon, Semax).
3. U.S. Food and Drug Administration. Pharmacy Compounding Advisory Committee meeting, July 23–24, 2026: agenda, materials, and vote summary.
4. Gusev EI, Skvortsova VI, Miasoedov NF, et al. Effectiveness of Semax in the acute period of hemispheric ischemic stroke. Zh Nevrol Psikhiatr Im S S Korsakova. 1997;97(6):26–34. Russian.
5. Gusev EI, Martynov MY, Kostenko EV, Petrova LV, Bobyrevva SN. The efficacy of Semax in the treatment of patients at different stages of ischemic stroke. Zh Nevrol Psikhiatr Im S S Korsakova. 2018;118(3–2):61–68. Russian.
6. Dolotov OV, Karpenko EA, Inozemtseva LS, et al. Semax, an analog of ACTH(4–10) with cognitive effects, regulates BDNF and trkB expression in the rat hippocampus. Brain Res. 2006;1117(1):54–60.
7. Holland & Knight. FDA advisory committee endorses compounding of certain peptides. August 4, 2026.
8. Semax nasal drops 0.1% and 1% (Peptogen, Russia): patient leaflet, English translation.
9. Representative Semax nasal-spray and vial listings and seller protocol pages, as sold September 2026.
10. STAT News. FDA peptide compounding panel backs epitalon and Semax, rejects emideltide. July 24, 2026.

This guide is an educational summary of published sources and is not medical advice. Semax has no approval outside Russia and no pathway to a United States pharmacy; every spray and vial sold here is an unapproved drug of unverified identity, strength, and sterility. The protocols described are reported as sellers describe them, not recommended. Status statements are current as of the edition date.

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READER'S GUIDE

Semax

A guide to the Russian nasal drops sold as a nootropic: thirty years of use in one country, no controlled trial anyone outside it can read, and a July 2026 committee vote the FDA's own reviewers argued against

Semax is a seven-amino-acid peptide built from a fragment of the stress hormone ACTH, designed in Moscow in the 1980s and registered in Russia as nasal drops for stroke, cognitive complaints, and a long list of neurological uses. In rats it raises the growth factor BDNF in the brain. In people it has been given for three decades in Russia, in studies that are open, unblinded, mostly in Russian, and mostly by the group that made it. American sellers offer it as a focus and memory spray, and as a vial to inject, on the strength of that record. This guide covers what the Russian label says, what the human studies actually were, why the FDA's reviewers found no usable evidence for any use, how the sprays and vials are dosed, and what the July 2026 advisory vote did and did not change.

What the studies have shown

THE HUMAN RECORD		
STUDY	REPORTED	CATCH
Stroke, 1997: 30 vs 80	Some faster motor recovery	Unblinded, untranslated
Cerebrovascular, 2005: 187	'Significant improvement'	No control
Stroke rehab, 2018: 110	Higher BDNF, better motor scores	Open, not randomized
Migraine, 1996: 37, one dose	4 of 12 headaches stopped	No control; authors deny analgesia
Volunteers, 2018 and 2020	Brain-scan changes vs placebo	A scan, not a symptom
Any Western trial	None	

FDA could not consider untranslated papers, which removed every stroke study. What remained was one abstract and one uncontrolled single-dose study.

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Randomized, double-blind trials of Semax in patients, in any language

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Human reports FDA tabulated; adverse events 'not discussed' or 'none reported' in each

WHAT WOULD COUNT

A placebo-controlled trial in the people it is sold to, measuring attention or memory over weeks. None exists; the cognition claim rests on rats.

How it is dosed, and the July 2026 vote

SELLER PROTOCOL FOR A 10 MG VIAL + 2 ML (5,000 MCG/ML). NO HUMAN STUDY BY INJECTION. DAILY.

WEEKS	DOSE	UNITS	PER 4 WK
1–2	300 mcg	6	8.4 mg
3–6	600 mcg	12	16.8 mg

After 6 2–4 weeks off

By nose the same mix is about 250 mcg a drop, five times the Russian 0.1% drop. Sprays: 300–375 mcg per spray on an unqualified pump; one or two sprays once or twice daily.

FDA STAFF, MAY 2026 Against listing: poorly characterized; no human pharmacokinetics by any route; no injection data; anticoagulant and dopamine-potentiating effects in rats; effectiveness evidence limited to one abstract and one uncontrolled study

COMMITTEE, JULY 24 Voted 8–5 to recommend Semax for cerebral ischemia, migraine, and trigeminal neuralgia; not for focus, memory, or ADHD

TODAY Not approved; not compoundable until rulemaking; the spray and vial remain unapproved drugs

READING THE HEADLINE

Sellers report the vote as FDA recognizing Semax. The reviewers found no usable evidence and no human safety data; a panel recommended listing anyway, for stroke and pain.

Micrograms, drops, sprays, and safety

UNITS = (MCG ÷ MCG/ML) × 100 ÷ 1,000

10 mg with 2 mL is 5,000 mcg/mL: 300 mcg is 6 units or about one drop. With 5 mL it is 2,000 mcg/mL and 300 mcg is 15 units. The Russian drops are 1,000 mcg/mL: 50 mcg a drop.

ILLUSTRATION ONLY		
PREPARATION	300 MCG	600 MCG
10 mg + 2 mL	6 units / 1 drop	12 units / 2 drops
5 mg + 5 mL	30 units	60 units
30 mg spray	1 spray	2 sprays

- Label: nasal irritation with prolonged use; not in pregnancy, psychosis, anxiety disorders, or seizure history; no nasal decongestants alongside.
- FDA: no human pharmacokinetics, no injection data, immunogenicity untested; reduced clotting and amplified amphetamine dopamine release in rats.
- Users: nasal burning, headache, feeling wired, insomnia; hair shedding claims have no study.
- One adverse event report to FDA (2025): eye pain and burning after online drops, hospitalized, persisting a year.
- Free base, acetate, and N-acetyl forms sold under one name; sprays on unqualified pumps; vials not sterile-certified.

WHAT DOES HAVE EVIDENCE

Sleep and exercise for attention; the approved ADHD drugs where ADHD is diagnosed; emergency care and rehabilitation for stroke. Semax has a mechanism in rats and a country's habit, not a trial.