



DOSSIER · SUBSTANCE

Glycine

Glycine is a proteinogenic amino acid; human studies show different, mostly small or inconsistent effects depending on form and field.

1,208

STUDIES IN
TOTAL

270

IN HUMANS

32

OF WHICH
CONTROLLED

257

IN ANIMALS

113

IN THE LAB

Figures from the IHR study database · Last updated 2026-10-15

How to Read This Dossier

ESTABLISHED

measured in humans, with a comparison group

PLAUSIBLE

supported by mechanism, animal studies or observation

HYPOTHESIS

a likely connection that still needs to be tested

Glycine at a Glance

Healthy people slept better with longer glycine intake, according to a systematic review of small studies with a high risk of bias ⁴.
 For psychotic symptoms, two systematic reviews report benefits of glycine ⁴⁵; as an add-on to clozapine, it showed no benefit in a small controlled study ²².
 A genetic analysis of large population data links higher blood glycine levels with a lower risk of coronary heart disease ¹.

We evaluated 104 human studies on Glycine, including 11 randomised controlled trials and 4 meta-analyses or systematic reviews; the controlled studies include 685 participants in total. As of 7 October 2026.

1. What Is Glycine? Occurrence, Origin and Forms

Glycine is the smallest proteinogenic amino acid and a building block of almost all proteins. The body produces it itself and takes it up from protein in food. It is used, among other things, as a food additive, as an excipient in medicines and as a dietary supplement.

Glycine occurs in almost all proteins, especially abundantly in collagen and gelatin. In the body it is present in blood and tissue and serves as a signalling molecule in the nervous system.

For studies and preparations, glycine is mostly produced chemically or obtained from proteins and processed into powder, capsules or solutions. Oral doses, infusion solutions and irrigation solutions are the forms mainly examined.

Forms and Preparations Studied

- Pure glycine as powder, capsules or tablets for oral intake
- Glycine as a component of amino acid infusion solutions
- Glycine as an irrigation solution
- Glycine as a food additive with a sweet taste
- Glycine as an excipient and buffer in pharmaceutical preparations
- Glycine bound in proteins such as collagen and gelatin

Not covered on this page:

- Collagen and gelatin preparations contain glycine, but the protein itself is studied there, not glycine alone.
- Betaine (trimethylglycine) and sarcosine (dimethylglycine) are substances in their own right with their own research questions.
- Glyphosate is a pesticide and shares only part of its name with glycine.
- Combination products of glycine with other amino acids, melatonin or further additives are not investigations of glycine alone.

2. What Does Glycine Do? Results by Area

AREA	RESULT IN CONTROLLED STUDIES	STRENGTH OF EVIDENCE	STUDIES	PARTICIPANTS
Psychiatry and Nervous System	mostly no difference	moderate	2 meta-analyses · 4 controlled · 22 other	93
Sleep and Falling Asleep	reviews only	low	1 meta-analyses · 0 controlled · 3 other	0
Wound Healing	mostly improved	low	0 meta-analyses · 1 controlled · 1 other	96
Metabolism and Blood Sugar	mostly no difference	unclear	0 meta-analyses · 1 controlled · 27 other	27
Liver and Fatty Liver	observational data only	unclear	0 meta-analyses · 0 controlled · 6 other	0
Blood Flow and Tissue Damage	observational data only	unclear	0 meta-analyses · 0 controlled · 6 other	0
Other investigations	mostly no difference	low	0 meta-analyses · 7 controlled · 37 other	227

How to read the table: counted are human studies whose results concern the area. “High” means at least one meta-analysis and two controlled studies showing improvement, or at least three controlled studies of which three quarters show improvement, with at least 300 participants in total. “Moderate” means at least two controlled studies showing improvement, as a majority, or one meta-analysis alongside controlled studies. “Low” means one controlled study showing improvement. Where an area has no controlled study, the strength of evidence is at most “low” (result “reviews only” or “observational data only”). Everything else is “unclear”. A study counts as showing improvement when at least half of its outcomes in this area improved. Reviews of combination products do not count as meta-analyses; results that only describe side effects or shares of users do not count as an effect. The same study is counted only once.

3. What the Studies Show in Detail

Glycine, Psychiatry and Nervous System: Human Studies

Two systematic reviews report benefits of glycine for psychotic symptoms, one of them as an add-on to antipsychotics; the studies were mostly small and short ⁴⁵. In addition to clozapine, glycine improved neither positive nor negative symptoms in patients with treatment-resistant schizophrenia; positive symptoms decreased only in the placebo group ²². In the ketamine model in healthy men, glycine prevented the decrease in theta activity, the MMN amplitude remained unchanged ¹⁸. In participants with a pronounced increase in the gamma response, glycine also attenuated the ketamine-induced negative symptoms ²⁰; resting gamma activity and psychometric values did not change ¹⁹. It remains open whether glycine shows a reproducible benefit in schizophrenia in larger studies and whether it attenuates the effect of clozapine.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
⁴ Soh et al. 2024	systematic review	Oral glycine administration; up to 14 days and 4 months; vs. various controls in the included studies
⁵ Hoenders et al. 2018	systematic review	Glycine added to antipsychotics; vs. Antipsychotics alone or other natural agents
¹⁸ Curic et al. 2025	controlled · 25 participants	glycine (NMDAR coagonist), placebo-controlled crossover; vs. placebo or ketamine alone
¹⁹ Haaf et al. 2023	controlled · 25 participants	glycine pretreatment, subanesthetic S-ketamine; vs. S-ketamine alone vs. glycine pretreatment plus S-ketamine
²⁰ Haaf et al. 2022	controlled · 24 participants	Glycine pretreatment before S-ketamine; vs. Placebo; S-ketamine alone
²² Potkin et al. 1999	controlled · 19 participants	Glycine added to clozapine; 30 g/day glycine; 12 weeks; vs. Placebo added to clozapine
⁴³ Guasp et al. 2025	case series · 41 participants	no glycine administration; study of GlyR antibodies; median follow-up 24 months; vs. no comparator; own and literature cases
⁴⁸ Nourbakhsh et al. 2025	case report · 1 participants	pantothenic acid and mitochondrial cocktail plus low-protein diet; vs. no control (single case)

Further studies in this area: ⁴⁹ ⁵² ⁵³ ⁵⁵ ⁵⁷ ⁵⁸ ⁶⁰ ⁶¹ ⁶² ⁶⁴ ⁶⁸ ⁶⁹ ⁷² ⁷⁴ ⁸² ⁸⁶ ⁸⁸ ⁹³ ⁹⁷ ⁹⁹

Glycine, Sleep and Falling Asleep: Human Studies

A systematic review reports better sleep in healthy people with longer glycine intake, based on small studies with a high risk of bias ⁴. A scoping review found at least one improved sleep measure in all three sleep studies with glycine ². In an open comparative study in children, sleep problems improved with glycine and with a homeopathic preparation, more so with the latter ¹⁶. It remains open whether the sleep effect of glycine is confirmed in larger placebo-controlled studies in people with sleep problems.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON	RESULT
² Fan et al. 2026	systematic review	Glycine-, collagen- or other glycine-containing supplements; vs. Placebo, alpha-lactalbumin (active comparator)	Sleep-related c
⁴ Soh et al. 2024	systematic review	Oral glycine administration; up to 14 days and 4 months; vs. various controls in the included studies	Sleep: improve
⁸⁷ Khosropanah et al. 2026	review	Glycine alongside vitamins, minerals and other amino acids	Sleep facilitat
⁹⁵ Ramos-Jiménez et al. 2024	review	Glycine dietary supplement; high doses >500 mg/kg body mass (toxic)	Sleep quality a

Glycine and Wound Healing: Human Studies

In patients with early peri-implantitis, plaque index, bleeding index as well as IL-6 and IL-1 β decreased after powder-jet cleaning with glycine ⁸. After six months, IL-1 β was higher with glycine than with erythritol powder ⁸. The informative value is limited because only this study is available and glycine there serves as a blasting powder, not as an ingested substance. **Hypothesis:** A review sees in non-essential amino acids such as glycine a plausible approach for wound and bone healing in older patients in oral and maxillofacial surgery ⁹⁴. Controlled studies with ingested glycine for wound healing are still pending.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
⁸ Pan et al. 2025	randomised controlled · 96 participants	Glycine-based subgingival sandblasting vs. erythritol sandblasting vs. control; Follow-up up to 6 months; vs. Erythritol san
⁹⁴ Kim et al. 2025	review	nonessential amino acids, including glycine

Glycine, Metabolism and Blood Sugar: Human Studies

A randomized crossover study found no difference between glycine and branched-chain amino acids in hemodialysis patients for glucagon-like peptide 1, cholecystokinin and peptide YY ¹¹. The mixture of glycine and N-acetylcysteine (GlyNAC) improved mitochondrial fatty acid oxidation and insulin resistance in older adults compared with placebo ¹⁴. Without a comparison group, triglycerides decreased in people with severe obesity with glycine, body weight remained the same ⁴⁶. It remains open whether pure glycine alone improves blood sugar or metabolism in people without a specific metabolic disease, since most studies investigated combination preparations, infusions or other forms.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
¹ Wittemans et al. 2019	cohort study · 80,003 participants	glycine (circulating levels, genetically studied); vs. genetic instruments for glycine vs. disease risk
³ Thimm et al. 2025	systematic review	Glycine supplementation, possibly with carnitine
¹¹ Genton et al. 2021	randomised controlled · 27 participants	Oral glycine versus branched-chain amino acids (BCAAs); 7 g twice daily; 4 months per period, 1-month washout, cro
²⁷ Li et al. 2026	cohort study · 23,634 participants	circulating metabolites, including glycine; no information; up to 26 years of follow-up; vs. participants with vs. without
³¹ Huidobro et al. 2026	cohort study · 1,738 participants	Plasma amino acids quantified by nuclear magnetic resonance, no glycine preparation; Median follow-up 4.3 years; vs
³² Feng et al. 2024	cross-sectional study · 774 participants	glycine from habitual diet; intake quartiles: <1.32; 1.32-1.82; 1.82-2.26; >2.26; vs. highest vs lowest intake quartile (Q4
³⁴ García-Gavilán et al. 2026	cohort study · 699 participants	Plasma metabolomics profile (LC-MS/MS), glycine part of shared signature; Baseline and 1-year follow-up; vs. Metab
³⁵ Palacios-González et al. 2022	cross-sectional study · 602 participants	No preparation; measurement of 40 serum metabolites; vs. MetS status as well as sex and age

Further studies in this area: [36](#) [39](#) [40](#) [42](#) [45](#) [46](#) [52](#) [54](#) [65](#) [70](#) [71](#) [80](#) [81](#) [84](#) [88](#) [89](#) [92](#) [95](#) [98](#) [100](#)

Glycine, Liver and Fatty Liver: Human Studies

For liver and fatty liver, no controlled studies on glycine alone are available; the evidence is therefore unclear. A small study in people with severe obesity found lower aminotransferases and a more favorable glutamate-serine-glycine index with ingested glycine without a comparison arm ⁴⁶. A cross-sectional study investigated glycine together with serine and threonine and found lower amino acid levels with a higher degree of steatosis, while a high-dose diet with these three amino acids improved MASLD pathogenesis in a mouse model ²⁸. A review reports on glycine as a metabolic marker in chronic liver diseases ⁸⁵. Another review describes support of detoxification pathways by glycine as a glutathione precursor ⁸⁴. A third review mentions a possible benefit of glycine rinse solution in ischemia-reperfusion injury of liver transplants, based predominantly on animal and cell findings ¹⁰². The efficacy and safety of pure, ingested glycine in humans remain open, since the available human findings are small, uncontrolled, or related to mixtures.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
²⁸ Mino et al. 2024	cross-sectional study · 23,036 participants	Glycine combined with serine and threonine (high diet in mouse model); vs. Groups by SLD/CC criteria; MASLD mo
⁴⁶ Tan et al. 2025	study · 19 participants	dietary glycine supplementation; 100 mg/kg/day; two weeks; vs. no control arm, before-after
⁵⁹ Lin et al. 2025	study	Glycine supplementation, partly combined with interferon-α; vs. Healthy controls or HBV-infected cells/mice witho

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
⁸⁴ Draganidis et al. 2026	review	Glycine as glutathione precursor (NAC considered separately)
⁸⁵ Huang et al. 2026	review	Amino acid metabolism, including glycine and branched-chain amino acids
¹⁰² Habib et al. 2006	review	Glycine

Glycine, Blood Flow and Tissue Damage: Human Studies

A genetic analysis of large population data links higher blood glycine levels with a lower risk of coronary heart disease, partly via blood pressure ¹. In ventilated intensive care patients with severe COVID-19, glycine via the tube lowered the fibrinogen level compared with usual treatment, but not mortality or ventilation duration ¹³. The mixture of glycine and N-acetylcysteine (GlyNAC) improved endothelial function in older adults compared with alanine placebo; what proportion glycine contributes to this is open ¹⁴. Controlled studies with pure glycine on the heart and vessels are still pending; it is open whether intake lowers the risk indicated by genetically higher blood levels.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
¹ Wittemans et al. 2019	cohort study · 80,003 participants	glycine (circulating levels, genetically studied); vs. genetic instruments for glycine vs. disease risk
²⁵ Li et al. 2025	cohort study · 245,072 participants	Circulating choline metabolites including glycine (NMR measurement); Median 14.1 years follow-up; vs. highest vs lowest c
⁴¹ Nunes et al. 2025	case-control study · 54 participants	No glycine preparation; measurement of endogenous glycine levels; 24 h in vitro; vs. sFit-1/PIGF ratio variations in vitro; c
⁶⁵ Yang et al. 2025	case-control study	Glycine supplementation (animal study); plasma metabolomics in humans; vs. Control group or salt-loaded rats without gly
⁷⁷ Chang et al. 2021	case-control study	genetically determined serum glycine (GWAS); vs. CAD/cardiovascular death cases vs. controls
⁹⁶ Anand et al. 2024	review	Glycine in amino acid metabolism

Glycine: Further Outcomes in Studies

The controlled studies in this area predominantly show no advantage of glycine. In people with alcohol dependence, glycine compared with placebo changed neither craving nor drinking amount in the laboratory ⁹. In ventilated intensive care patients, glycine levels in blood and muscle increased, muscle wasting did not differ with certainty ¹⁰. In malnourished hemodialysis patients, the fat-free mass index turned out more favorable with glycine than with branched-chain amino acids ¹². The evidence is weak: the studies are small and investigate different forms such as oral intake, enteral administration, and flushing solution. Mixtures such as glycine plus N-acetylcysteine do not allow conclusions about glycine alone, since glycine is not the only difference between the groups ⁷¹⁴. It remains open whether the more favorable fat-free mass in hemodialysis patients and a possible protection against muscle wasting in critically ill patients are confirmed in larger studies.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
² Fan et al. 2026	systematic review	Glycine-, collagen- or other glycine-containing supplements; vs. Placebo, alpha-lactalbumin (active comparator)
⁸ Pan et al. 2025	randomised controlled · 96 participants	Glycine-based subgingival sandblasting vs. erythritol sandblasting vs. control; Follow-up up to 6 months; vs. Erythritol sar
⁹ Olsson et al. 2025	randomised controlled · 48 participants	Oral glycine versus placebo; 0.12 g/kg per day; 5 days; vs. Placebo, followed by alcohol challenge (up to four 12 g drinks)
¹⁰ Ali et al. 2025	randomised controlled · 29 participants	Enteral glycine added to usual care; 0.2 or 0.4 g/kg/day (median 16.2 and 29.6 g/day); maximum 7 days; vs. Placebo

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
11 Genton et al. 2021	randomised controlled · 27 participants	Oral glycine versus branched-chain amino acids (BCAAs); 7 g twice daily; 4 months per period, 1-month washout, crossover
12 Genton et al. 2021	randomised controlled · 27 participants	Oral glycine supplementation; 2 × 7 g/day; 4 months, then 1-month washout, then crossover; vs. Oral BCAA (2 × 7 g/day)
13 Vargas et al. 2024	randomised controlled	Enteral glycine added to usual care; 0.5 g/kg/day; until discharge, weekly follow-up; vs. usual care alone (open-label control)
24 Hahn et al. 1989	controlled	2.2% glycine infusion, 1.5% glycine + 1% ethanol, 5% mannitol (control); glycine irrigation; 1 litre infusion; irrigant absorpt

Further studies in this area: [26](#) [29](#) [30](#) [32](#) [33](#) [37](#) [38](#) [40](#) [44](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [56](#) [57](#) [58](#) [62](#) [63](#) [65](#) [66](#) [67](#) [73](#) [75](#) [76](#) [78](#) [80](#) [83](#) [86](#) [88](#) [89](#) [90](#) [91](#) [95](#) [101](#)

4. How Is Glycine Dosed? Preparation, Dose and Duration in Studies

The studies used pure glycine for intake, via a feeding tube or as an infusion, as an irrigation solution during operations and as a powder jet during dental cleaning. Some investigations tested combination preparations such as glycine plus N-acetylcysteine (GlyNAC) or glycine with carnitine and a protein-restricted diet. The forms are not comparable with one another; the doses are shown in the table.

PREPARATION OR FORM	DOSE	DURATION	STUDY
Iclepertin (BI 425809), glycine transporter-1 inhibitor	10 mg once daily	12 weeks	6
Glycine plus N-acetylcysteine (GlyNAC), 1:1	2.4 g, 4.8 g or 7.2 g/day	2 weeks	7
Glycine-based subgingival sandblasting vs. erythritol sandblasting vs. control	—	Follow-up up to 6 months	8
Oral glycine versus placebo	0.12 g/kg per day	5 days	9
Enteral glycine added to usual care	0.2 or 0.4 g/kg/day (median 16.2 and 29.6 g/day)	maximum 7 days	10
Oral glycine versus branched-chain amino acids (BCAAs)	7 g twice daily	4 months per period, 1-month washout, crossover	11
Oral glycine supplementation	2 × 7 g/day	4 months, then 1-month washout, then crossover	12
Enteral glycine added to usual care	0.5 g/kg/day	until discharge, weekly follow-up	13
GlyNAC (glycine plus N-acetylcysteine) versus isonitrogenous alanine placebo	—	16 weeks in OA, 2 weeks in YA	14
GlyNAC (glycine + N-acetylcysteine) vs. isonitrogenous placebo (alanine)	—	16 weeks (older adults), 2 weeks (young adults)	15
Glycine as comparator (ZinCyp-3-02 as test product)	—	28 days	16
Glycine as placebo or 15 g glycine in test meal	5 g/day for 14 days; 15 g in test meal	14 days of step-reduction	17
Isotopically labeled tracer infusion: [1,2-13C2]glycine, [2,3,3-2H3]serine, [2H5]phenylalanine	—	Re-study 6 months after bariatric surgery	21
Glycine added to clozapine	30 g/day glycine	12 weeks	22
[1,2-13C2]glycine infusion as tracer	—	measured before and 6 months after bariatric surgery	23

5. Is Glycine Safe? Side Effects in Studies

In a controlled study in children with sleep disorders, a non-serious adverse drug reaction occurred with glycine; both treatments were well tolerated ¹⁶. In schizophrenia with clozapine, positive symptoms decreased only in the placebo group; the authors suspect that glycine could interfere with the effect of clozapine ²². A case report describes confusion, seizures and hyponatremia after uptake of glycine irrigation solution during a hysteroscopy, which resolved after treatment ⁵⁰.

STUDY	REPORTED SIDE EFFECTS
⁵ Hoenders et al. 2018	All natural agents except reserpine well tolerated
⁶ Harvey et al. 2025	mild to moderate, no new risks identified
⁷ Lizzo et al. 2022	safe and well tolerated
¹³ Vargas et al. 2024	none reported
¹⁴ Kumar et al. 2023	safe and well-tolerated
¹⁶ Jong et al. 2016	ZinCyp-3-02: 2, glycine: 1 nonserious adverse drug reactions
²⁷ Li et al. 2026	no information
³⁷ Zwart et al. 2026	higher glycine concentrations associated with higher risk of toxicity-induced treatment modifications
⁵⁰ Hameed et al. 2024	confusion, disorientation, seizures, hypo-osmolar hyponatremia, hyperammonemia
⁵² Bozacı et al. 2026	LDL cholesterol increase in ketogenic group; mortality similarly high in both groups
⁷⁹ Kumar et al. 2021	supplementation was well tolerated
⁹¹ Ifrim et al. 2025	tissue biocompatibility varies by powder

6. What Remains Open: Limits of the Evidence

- Many controlled studies are small and differ in form, dose and comparison group.
- Positive signals come partly from model investigations in healthy men rather than from patient groups.
- Several studies tested combination preparations, so the contribution of glycine alone cannot be distinguished.
- Controlled studies on ingested glycine are still pending in several fields, for example for wound healing.
- The transferability of blood level and infusion findings to a supplementation is open.

7. Bottom Line: What Is Established About Glycine

Glycine is a proteinogenic amino acid that the body produces itself and takes up via protein. Human studies investigate very different forms: pure glycine as powder, capsules or tablets for intake, enteral administration, infusion solutions and irrigation solutions. The findings differ depending on the field. For sleep and psychotic symptoms, systematic reviews report benefits of glycine ⁴⁵; as an add-on to clozapine, it remained without benefit in a small controlled study ²². Higher blood glycine levels are associated with less coronary heart disease in genetic analyses ¹; in ventilated COVID-19 patients, glycine via the tube did not change mortality or ventilation duration ¹³.

In hemodialysis patients, glycine compared with branched-chain amino acids changed neither gut hormones nor gut microbiota ¹¹. The studies are often small, and combination preparations such as GlyNAC do not allow conclusions about glycine alone; larger studies with pure glycine are still pending.

Frequently Asked Questions

How well has Glycine been studied in humans?

We evaluated 104 human studies on Glycine, including 11 randomised controlled trials and 4 meta-analyses or systematic reviews; the controlled studies include 685 participants in total. As of 7 October 2026.

Does Glycine help with psychiatry and Nervous System? What the studies show

We evaluated 2 meta-analyses or systematic reviews, 4 controlled studies and 22 further studies; the controlled studies include 93 participants in total. Result of the controlled studies: mostly no difference. Strength of evidence under our published rules: moderate. Sources: ⁴⁵¹⁸¹⁹

Does Glycine help with sleep and Falling Asleep? What the studies show

We evaluated one meta-analysis or systematic review and 3 further studies. There are no controlled studies yet, only reviews; the strength of evidence is therefore low at most. Sources: ²⁴⁸⁷⁹⁵

Does Glycine help with wound Healing? What the studies show

We evaluated one controlled study and one further study; the controlled studies include 96 participants in total. Result of the controlled studies: mostly improved. Strength of evidence under our published rules: low. Sources: ⁸⁹⁴

Does Glycine help with metabolism and Blood Sugar? What the studies show

We evaluated one controlled study and 27 further studies; the controlled studies include 27 participants in total. Result of the controlled studies: mostly no difference. Strength of evidence under our published rules: unclear. Sources: ¹³¹¹²⁷

What is glycine and how is it used in studies?

Glycine is the smallest proteinogenic amino acid and a building block of almost all proteins. In human studies, it was used as pure powder, in capsules or tablets for intake, enterally, as a component of amino acid infusion solutions and as an irrigation and lavage solution. These forms are not comparable with one another, and the doses are shown in the table.

Do human studies show a benefit of glycine for sleep?

According to a systematic review, healthy people slept better with longer glycine intake; the underlying studies were small and had a high risk of bias ⁴. A scoping review found at least one improved sleep measure in all three sleep studies with glycine; for collagen peptides the picture was mixed ². In an open-label comparative study in children, sleep complaints improved with glycine and with a homeopathic preparation, with the latter showing a greater improvement ¹⁶.

Is there evidence of effects on psychotic symptoms?

Two systematic reviews reported benefits of oral glycine for psychiatric symptoms ⁴⁵. This contrasts with a small controlled study in which glycine in addition to clozapine did not improve positive and negative symptoms in treatment-resistant schizophrenia ²². In the ketamine model in healthy men, glycine attenuated individual EEG changes ¹⁸²⁰, ketamine-induced negative symptoms only in a subgroup ²⁰; a third study found no difference ¹⁹.

How safe is the intake of glycine?

In a controlled study in children with sleep disorders, a non-serious adverse drug reaction occurred with glycine; both treatments were well tolerated ¹⁶. In schizophrenia with clozapine, positive symptoms decreased only in the placebo group; the authors suspect that glycine could interfere with the effect of clozapine ²². A case report describes confusion, seizures and hyponatremia after uptake of glycine irrigation solution during a hysteroscopy, which resolved after treatment ⁵⁰.

What did the studies on metabolism and blood sugar investigate?

In hemodialysis patients, glycine did not differ from branched-chain amino acids for glucagon-like peptide 1, cholecystokinin and peptide YY ¹¹. Without a comparison group, triglycerides and liver values decreased in people with severe obesity with glycine ⁴⁶. The mixture of glycine and N-acetylcysteine (GlyNAC) lowered insulin resistance compared with placebo; what proportion glycine contributes to this is open ¹⁴.

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