



DOSSIER · SUBSTANCE

Quercetin

Quercetin is a flavonol from plants; human studies show mainly a slightly lower blood pressure, while findings on muscle strength and inflammation are inconsistent.

1,220

STUDIES IN
TOTAL

93

IN HUMANS

16

OF WHICH
CONTROLLED

186

IN ANIMALS

311

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

Quercetin at a Glance

For the heart and circulation, quercetin lowered blood pressure in a meta-analysis of placebo-controlled studies, especially at higher doses ⁶.
 In men before a bypass operation, quercetin improved vascular relaxation in artery samples in a randomized controlled trial, but not in women ¹⁵.
 For inflammation and the immune system, several controlled studies found no differences in adhesion molecules ¹⁹³⁰.

We evaluated 104 human studies on Quercetin, including 20 randomised controlled trials and 11 meta-analyses or systematic reviews; the controlled studies include 1,228 participants in total. As of 10 October 2026.

1. What Is Quercetin? Occurrence, Origin and Forms

Quercetin is a plant pigment belonging to the flavonols, a subgroup of the flavonoids. It occurs in many plants, including onions, apples, capers, buckwheat and tea. It is used as a component of plant-based foods and herbal preparations, and the isolated substance is offered in supplement form.

In plants quercetin occurs mainly bound to sugars as glycosides, with high amounts in the outer layers of leaves and fruits. In research it is studied as an isolated substance or in defined preparations.

Quercetin is obtained by extraction from plant material; the sugar part can be removed or exchanged to give the aglycone or specific glycosides. Studies use different forms, including the aglycone, glycosides such as isoquercetin and rutin, and complexes with phospholipids.

Forms and Preparations Studied

- Quercetin aglycone, often as the dihydrate
- Isoquercetin (quercetin-3-O-glucoside)
- Rutin (quercetin-3-O-rutinoside)
- Quercetin phytosome, a complex with phospholipids
- Enzymatically modified isoquercitrin (EMIQ)

Not covered on this page:

- Other flavonols such as kaempferol, fisetin and myricetin
- Taxifolin, also called dihydroquercetin
- Quercetin-rich foods as such, for example onions and apples
- Quercetin metabolites in blood, for example quercetin-3-O-glucuronide

2. What Does Quercetin Do? Results by Area

AREA	RESULT IN CONTROLLED STUDIES	STRENGTH OF EVIDENCE	STUDIES	PARTICIPANTS
Heart and circulation	mixed	high	2 meta-analyses · 6 controlled · 7 other	283
Inflammation and immune system	mostly no difference	moderate	1 meta-analyses · 7 controlled · 18 other	236
Cellular ageing	mostly improved	moderate	0 meta-analyses · 3 controlled · 4 other	220
Absorption and metabolism	mostly improved	moderate	0 meta-analyses · 3 controlled · 7 other	41
Physical performance and recovery	mixed	low	0 meta-analyses · 3 controlled · 4 other	88
Blood sugar and metabolism	mostly no difference	unclear	0 meta-analyses · 2 controlled · 8 other	22
Allergies and histamine	reviews only	unclear	0 meta-analyses · 0 controlled · 4 other	0
Other investigations	mixed	high	2 meta-analyses · 4 controlled · 37 other	170

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

Quercetin, Heart and Circulation: Human Studies

A meta-analysis of placebo-controlled trials found lower systolic and diastolic blood pressure with quercetin, significant only at higher doses ⁶. A large meta-analysis on micronutrients counts quercetin among the substances with medium- to high-quality evidence for lower cardiovascular risk factors ¹. At high altitude, blood pressure in healthy men was lower with quercetin than with placebo ¹⁴. In male smokers, it fell with quercetin-rich onion skin extract compared with baseline, and HDL cholesterol rose more than with placebo ³⁰. In men before a bypass operation, quercetin improved vascular relaxation in the removed artery tissue, but not in women ¹⁵. Atrial fibrillation after the operation occurred less often with quercetin than with placebo ¹⁵. In sickle cell disease, isoquercetin lowered blood coagulation and platelet aggregation compared with baseline; for the primary endpoint P-selectin, it did not differ from placebo ¹⁹. There are results without a difference: for blood pressure and endothelial function, no advantage was discernible in a study with quercetin from onion skin extract added to a test meal ²⁴, and an isoquercetin mixture with sodium nitrite changed neither flow-mediated vasodilation nor biomarkers of endothelial dysfunction ¹⁶. The findings come predominantly from small, short studies in healthy or already ill adults; the overall reliability is high, but transferability to long-term use and different quercetin forms remains open.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
¹ An et al. 2022	meta-analysis · 883,627 participants	Quercetin as dietary supplement (form not specified); vs. Control (placebo or no supplementation)
⁶ Serban et al. 2016	meta-analysis · 587 participants	Quercetin supplementation; ≥500 mg/day or <500 mg/day; vs. Placebo
¹⁴ Sagi et al. 2026	randomised controlled · 110 participants	Bar containing 500 mg quercetin vs. placebo bar; 500 mg quercetin daily, one bar; 15 days, starting 2 days before asc
¹⁵ Mury et al. 2025	randomised controlled · 97 participants	Quercetin (aglycone); 500 mg twice daily; 2 days pre-surgery until discharge; vs. Placebo
¹⁹ Lizarralde-Iragorri et al. 2024	randomised controlled · 46 participants	Isoquercetin (IQ); fixed dose, exact amount not reported; short-term (exact duration not reported); vs. placebo, rando
²⁴ Brüll et al. 2017	randomised controlled · 22 participants	quercetin from onion skin extract or placebo with test meal; 54 mg quercetin; acute intake, measurements before and
³⁰ Lee et al. 2011	randomised controlled	Quercetin capsules from onion peel extract; 100 mg quercetin daily; 10 weeks; vs. Placebo (n=43)
³³ Kuennen et al. 2011	controlled · 8 participants	Quercetin (heat shock response inhibitor); 2,000 mg/day; 7 days; vs. Placebo, identical protocol

Further studies in this area: [57](#) [61](#) [72](#) [74](#) [78](#) [83](#) [90](#)

Quercetin, Inflammation and Immune System: Human Studies

In this area, studies on inflammation and the immune system predominantly show no advantage. No difference from placebo was found for vaccine responses ¹⁸, IL-6 and sVCAM-1 ³⁰, hs-CRP after a test meal ²⁴, and soluble P-selectin ¹⁹. Compared with baseline, isoquercetin in sickle cell disease inhibited tissue factor gene expression of mononuclear cells and protein disulfide isomerase reductase in plasma ¹⁹. The strength of evidence is medium; various forms such as aglycone, isoquercetin and quercetin glycoside were tested. A meta-analysis on dietary polyphenols in rheumatoid arthritis, including studies with quercetin alone, found for the polyphenols overall lower disease activity as well as lower CRP and a lower erythrocyte sedimentation rate ². In a randomized controlled trial in COVID-19, CRP and ferritin fell more with a mixture of quercetin, vitamin C and bromelain than with routine treatment alone; intubations and deaths were not less frequent ¹³. A randomized controlled trial on isoquercetin plus sodium nitrite in chronic kidney disease before dialysis found no difference in inflammatory biomarkers ¹⁶. A randomized controlled trial on the mixture NS-5 of resveratrol, pterostilbene, quercetin, δ-tocotrienol and nicotinic acid found lower nitric oxide and CRP values compared with baseline ²⁹. Mixture preparations do not allow any statement about quercetin alone.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
² Long et al. 2023	meta-analysis · 3,852 participants	quercetin, one of 15 dietary polyphenols; vs. control (placebo/standard therapy, not specified)
⁴ Wang et al. 2025	meta-analysis · 3,132 participants	Quercetin as dietary polyphenol supplement; vs. other polyphenols or control in network meta-analysis
¹⁵ Mury et al. 2025	randomised controlled · 97 participants	Quercetin (aglycone); 500 mg twice daily; 2 days pre-surgery until discharge; vs. Placebo

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
¹⁸ Takahama et al. 2026	randomised controlled · 50 participants	Quercetin glycoside complex, capsules; 2 capsules daily of 280 mg ± 5% QG each; 4 weeks before mRNA booster, im
¹⁹ Lizarralde-Iragorri et al. 2024	randomised controlled · 46 participants	Isoquercetin (IQ); fixed dose, exact amount not reported; short-term (exact duration not reported); vs. placebo, randor
²⁴ Brüll et al. 2017	randomised controlled · 22 participants	quercetin from onion skin extract or placebo with test meal; 54 mg quercetin; acute intake, measurements before and
³⁰ Lee et al. 2011	randomised controlled	Quercetin capsules from onion peel extract; 100 mg quercetin daily; 10 weeks; vs. Placebo (n=43)
³² Juan et al. 2025	controlled · 13 participants	quercetin supplementation; 1000 mg/day; 21 days; vs. placebo, double-blind crossover, acute HIIIE

Further studies in this area: [33](#) [43](#) [44](#) [45](#) [50](#) [57](#) [61](#) [63](#) [64](#) [69](#) [72](#) [73](#) [75](#) [77](#) [80](#) [81](#) [82](#) [87](#)

Quercetin and Cellular Ageing: Human Studies

At high altitude, the quercetin group had lower values of the lipid peroxidation marker malondialdehyde and retained its glutathione ¹⁴. In a placebo-controlled crossover study with men, quercetin reduced oxidative DNA damage after intensive interval training ³². In men with coronary heart disease, quercetin reversed senescence and inflammation patterns in vascular cells ¹⁵. A randomized controlled trial on the mixture of isoquercetin and sodium nitrite found no difference from placebo for oxidative stress ¹⁶. With the mixture NS-5 of resveratrol, pterostilbene, quercetin, δ-tocotrienol and nicotinic acid, the total antioxidant status increased compared with baseline ²⁹. The strength of evidence is moderate; the studies are mostly small and short, some not randomized, and the results apply only to the form and preparation studied in each case, while for mixed preparations no statement about quercetin alone is possible.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
² Long et al. 2023	meta-analysis · 3,852 participants	quercetin, one of 15 dietary polyphenols; vs. control (placebo/standard therapy, not specified)
¹⁴ Sagi et al. 2026	randomised controlled · 110 participants	Bar containing 500 mg quercetin vs. placebo bar; 500 mg quercetin daily, one bar; 15 days, starting 2 days before ascent
¹⁵ Mury et al. 2025	randomised controlled · 97 participants	Quercetin (aglycone); 500 mg twice daily; 2 days pre-surgery until discharge; vs. Placebo
³² Juan et al. 2025	controlled · 13 participants	quercetin supplementation; 1000 mg/day; 21 days; vs. placebo, double-blind crossover, acute HIIIE
⁴⁴ Lee et al. 2024	study · 19 participants	Dasatinib plus Quercetin (DQ), later plus Fisetin (DQF); 6 months (DQ); 6 months (DQF) after one year; vs. DQ versus DQI
⁶³ Medoro et al. 2025	review	Quercetin, also in nanoparticles, nanoemulsions and solid lipid carriers; vs. Combination with anti-VEGF agents and neur
⁸⁰ Ezzati et al. 2022	review	Quercetin as dietary supplement, form not specified; vs. no comparison, review

Quercetin, Absorption and Metabolism: Human Studies

For the absorption of quercetin, small controlled studies tested formulations intended to improve absorption. A randomized controlled trial found better bioavailability for quercetin aglycone in a hybrid hydrogel formulation with fenugreek galactomannans than for unformulated quercetin ²⁶; another randomized controlled trial showed better oral absorption for a quercetin phytosome with phospholipids from food lecithin than for unformulated quercetin ²⁷. The results apply in each case only to the formulation studied; direct controlled comparisons of aglycone, isoquercetin, rutin and enzymatically modified isoquercetin are still pending.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
²⁶ Joseph et al. 2022	randomised controlled · 16 participants	Hybrid-hydrogel formulation of quercetin (FQ-35) using fenugreek galactomannans; Single oral dose (exact dose not reported)
²⁷ Riva et al. 2019	randomised controlled · 12 participants	Quercetin Phytosome (lecithin complex) vs. unformulated quercetin, film-coated tablets; one dose quercetin and two doses quercetin
³² Juan et al. 2025	controlled · 13 participants	quercetin supplementation; 1000 mg/day; 21 days; vs. placebo, double-blind crossover, acute HIIIE
³⁷ Mennen et al. 2008	cohort study · 154 participants	Dietary polyphenols including quercetin; no supplementation stated; 7 days and 2 days (two sub-studies); vs. Spot urine ·
³⁸ Tamura et al. 2017	cross-sectional study · 56 participants	Quercetin incubated with fecal suspensions; vs. no control arm; correlation with microbiota and diet
⁵⁰ Ryan et al. 2019	study · 10 participants	Nutrition support beverage containing quercetin and other ingredients; 12 weeks; vs. no control group (single-arm, open-label)
⁵¹ Guo et al. 2014	study	Quercetin aglycone with a standardized meal; 1095 mg; 24-h pharmacokinetics; vs. no control group; correlation with vitamin C
⁵² Song et al. 2026	review	Quercetin, including nanodelivery systems

Further studies in this area: ⁹⁰ ⁹¹

Quercetin, Physical Performance and Recovery: Human Studies

In older adults in strength training, maximum strength increased more with quercetin glycosides than with placebo, accompanied by higher discharge rates of motor units ²¹. After one week, the recruitment threshold of motor units fell with quercetin glycosides compared with baseline, but not with placebo ²². In a non-randomized controlled study, contractile strength after light or moderate exercise declined more with quercetin glycosides than with placebo ³¹. The studies are small and tested quercetin glycosides; further sports studies concerned mixtures, for example with mango leaf extract or green tea extract, and do not allow any statement about quercetin alone.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
²¹ Nishikawa et al. 2025	randomised controlled · 26 participants	Quercetin glycosides (QUE); 200 mg/day; 6 weeks; vs. Placebo (PLA) plus resistance training
²² Nishikawa et al. 2024	randomised controlled · 24 participants	Quercetin glycosides versus placebo; 7 days; vs. Placebo (PLA)
³¹ Nishikawa et al. 2025	controlled · 38 participants	quercetin glycoside 500 mg vs. placebo; 500 mg before each session; two single resistance exercise sessions; vs. placebo
⁶⁵ Zhang et al. 2025	review	Polyphenols, including quercetin
⁷⁰ Poullos et al. 2024	review	quercetin among antioxidant supplements; vs. other antioxidants or control, not separately analysed
⁹² Braakhuis et al. 2015	review	Quercetin as dietary supplement; vs. other antioxidants and controls

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
93 Malaguti et al. 2013	review	Polyphenols including quercetin

Quercetin, Blood Sugar and Metabolism: Human Studies

A randomized controlled trial with quercetin aglycone from onion skin extract with a test meal showed no difference in triglycerides, cholesterol, insulin, HDL and glucose in overweight to obese adults with hypertension [24](#). A meta-analysis on nutraceuticals such as vitamin D, inositol and quercetin in polycystic ovary syndrome found overall lower fasting insulin, most pronounced with vitamin D [7](#). The strength of evidence is low, and the finding applies to a single administration with a test meal; studies on longer intake and other forms are still pending.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
7 Çelik et al. 2026	meta-analysis	Nutraceuticals including vitamin D, inositol, and quercetin; vs. Control groups of included randomized and quasi-experi
24 Brüll et al. 2017	randomised controlled · 22 participants	quercetin from onion skin extract or placebo with test meal; 54 mg quercetin; acute intake, measurements before and 2
30 Lee et al. 2011	randomised controlled	Quercetin capsules from onion peel extract; 100 mg quercetin daily; 10 weeks; vs. Placebo (n=43)
52 Song et al. 2026	review	Quercetin, including nanodelivery systems
57 Jacobo-Velázquez et al. 2026	review	Quercetin, formulation varying across studies; variable, not specified; variable, not specified; vs. no uniform comparat
60 Pathak et al. 2026	review	Flavonoids, including quercetin
61 Rad et al. 2025	review	Quercetin alongside curcumin, genistein, hesperidin; predominantly short trial durations; vs. control groups of included
75 Santa et al. 2023	review	Phytochemicals from citrus and grapes plus vitamin D

Further studies in this area: [76](#) [84](#)

Quercetin, Allergies and Histamine: Human Studies

For allergies and histamine, the statements on quercetin have so far been based on review articles. A review on natural substances in allergic rhinitis and asthma attributes to quercetin an inhibition of the release of alarmins and the maturation of dendritic cells as well as mast cell stabilization [55](#). A review on quercetin and its lecithin formulation mentions small clinical studies with quercetin alone that reported fewer symptoms and a better quality of life [62](#). Two further review articles report fewer rhinitis symptoms with quercetin, partly in better absorbable formulations [66](#), as well as fewer inflammatory cells [71](#). Larger controlled studies with a clearly named quercetin form are still pending; several of the reported effects come from mixed preparations or preclinical models.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON	RI
55 Zhang et al. 2026	review	Quercetin as flavonoid among other natural compounds	A
62 Naso et al. 2025	review	Quercetin as monotherapy and quercetin-phospholipid formulation; vs. Control in preclinical models; not reported for human studies	A
66 Zafrilla et al. 2025	review	Quercetin, bioavailable formulations; vs. Control/placebo in small randomized trials	rt

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON	REMARKS
71 Kaag et al. 2023	review	Quercetin as dietary component/nutraceutical; vs. Control groups of the RCTs (not further described)	S

Quercetin: Further Outcomes in Studies

A randomized controlled trial with quercetin bars lowered the frequency and severity of acute mountain sickness in healthy men during ascent to high altitude compared with placebo and improved hemoglobin and hematocrit [14](#). A randomized controlled trial with quercetin aglycone found an improvement in social responsiveness within the group in adults with autism spectrum disorder, but no difference between the groups [17](#). The findings apply to the form studied in each case; because of small participant numbers and short duration, larger replications are still pending.

STUDY	DESIGN · PARTICIPANTS	PREPARATION · DOSE · DURATION · COMPARISON
3 Zhou et al. 2024	meta-analysis · 3,650 participants	Quercetin among 12 antioxidants; vs. other antioxidants and placebo/control
5 Wu et al. 2025	meta-analysis · 894 participants	Oral polyphenol supplements, including quercetin; not reported; not reported; vs. Placebo
7 Çelik et al. 2026	meta-analysis	Nutraceuticals including vitamin D, inositol, and quercetin; vs. Control groups of included randomized and quasi-experimental studies
8 Wójtowicz et al. 2026	review	Dietary supplements, including quercetin; vs. Placebo in randomized controlled trials
9 Amjadi et al. 2026	systematic review	Dietary polyphenols, including quercetin; vs. low vs. high polyphenol/quercetin intake
10 Rostampour et al. 2025	meta-analysis	Quercetin from dietary intake; vs. highest versus lowest intake
11 Inchingolo et al. 2022	systematic review	Quercetin together with resveratrol and curcumin
12 Parvaresh et al. 2016	systematic review	Quercetin (Q) from usual diet; 1.01-31.7 mg/day; vs. no quercetin or control

Further studies in this area: [14](#) [17](#) [18](#) [33](#) [34](#) [35](#) [36](#) [39](#) [40](#) [41](#) [42](#) [46](#) [47](#) [48](#) [49](#) [50](#) [52](#) [53](#) [54](#) [56](#) [58](#) [59](#) [60](#) [63](#) [67](#) [68](#) [79](#) [81](#) [85](#) [86](#) [87](#) [88](#) [89](#) [94](#) [95](#)

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

The studies predominantly used quercetin aglycone, sometimes as a dihydrate, as well as isoquercetin, quercetin glycosides and quercetin phytosome. Some investigations tested mixed preparations, for example with vitamin C and bromelain, with sodium nitrite, or with resveratrol and other substances. The doses and dosage forms are shown in the table.

PREPARATION OR FORM	DOSE	DURATION	STUDY
QCB (quercetin, vitamin C, bromelain)	—	from study baseline to discharge, intubation, or death	13
Bar containing 500 mg quercetin vs. placebo bar	500 mg quercetin daily, one bar	15 days, starting 2 days before ascent	14
Quercetin (aglycone)	500 mg twice daily	2 days pre-surgery until discharge	15
Isoquercetin plus sodium nitrite	isoquercetin 225 mg once daily, sodium nitrite 40 mg twice daily	12 weeks	16
Quercetin (form not specified)	—	60 days	17
Quercetin glycoside complex, capsules	2 capsules daily of 280 mg ± 5% QG each	4 weeks before mRNA booster, immune profiling 3 months	18
Isoquercetin (IQ)	fixed dose, exact amount not reported	short-term (exact duration not reported)	19

PREPARATION OR FORM	DOSE	DURATION	STUDY
dGTE+ containing quercetin, EGCG and α-lipoic acid	quercetin 50 mg/d, EGCG 400 mg/d, LA 150 mg/d	8 weeks	20
Quercetin glycosides (QUE)	200 mg/day	6 weeks	21
Quercetin glycosides versus placebo	—	7 days	22
Mixed flavonoid supplement with 200 mg quercetin plus adjuvants	678 mg total flavonoids, including 200 mg quercetin, for 2 weeks	2 weeks supplementation, 75-km cycling time trial	23
quercetin from onion skin extract or placebo with test meal	54 mg quercetin	acute intake, measurements before and 2 and 4 h postprandially	24
Xpand® 2X multi-ingredient performance supplement (contains quercetin)	—	8 weeks, 3 training days per week	25
Hybrid-hydrogel formulation of quercetin (FQ-35) using fenugreek galactomannans	Single oral dose (exact dose not reported)	Single-dose pharmacokinetics	26
Quercetin Phytosome (lecithin complex) vs. unformulated quercetin, film-coated tablets	one dose quercetin and two doses Quercetin Phytosome	single dose, samples up to 24 h	27

5. Is Quercetin Safe? Side Effects in Studies

The studies predominantly report good tolerability of quercetin glycosides and isoquercetin; serious adverse events were not attributed to the preparation ¹⁸¹⁹. In one study with muscadine grape skin extract, which contains ellagic acid, quercetin and resveratrol, occasional mild gastrointestinal complaints such as bloating and soft stool occurred ⁴⁸.

STUDY	REPORTED SIDE EFFECTS
² Long et al. 2023	addition of polyphenols did not increase adverse events
³ Zhou et al. 2024	Quercetin among three safest (SUCRA 0.24)
⁵ Wu et al. 2025	Safety of quercetin needs further verification
¹⁵ Mury et al. 2025	Pro-inflammatory effect in females
¹⁶ Chen et al. 2020	no significant difference in adverse events
¹⁷ Rezaeifar et al. 2026	Safety assessed, no adverse event data reported
¹⁸ Takahama et al. 2026	Local and systemic vaccine reactions similar; QG well tolerated
¹⁹ Lizarralde-Iragorri et al. 2024	IQ well tolerated; 21 adverse and 14 serious events not attributable to study drug
²⁰ Roberts et al. 2021	none reported
²⁷ Riva et al. 2019	no notable side effects
²⁸ Corsale et al. 2018	Minimal adverse events reported
²⁹ Qureshi et al. 2013	All subjects completed each phase without complaints

6. What Remains Open: Limits of the Evidence

- Many studies are small and short; data on longer-term use are still pending.

- The results apply only to the form and preparation studied, not to quercetin in general.
- Controlled comparisons with forms such as rutin and enzymatically modified isoquercetin are still pending.
- Several findings come from mixed preparations and do not allow any statement about quercetin alone.
- For allergies and histamine, the statements are based on review articles; larger studies specifically on allergic rhinitis are still pending.

7. Bottom Line: What Is Established About Quercetin

Quercetin is a flavonol that has been studied in various forms. The most consistent finding is a slight lowering effect on blood pressure, especially at higher doses ⁶. In older adults doing strength training, strength increased more with quercetin glycosides than with placebo ²¹.

Next, larger and longer studies with a clearly named form are needed, for example on blood pressure and muscle strength in old age.

Frequently Asked Questions

How well has Quercetin been studied in humans?

We evaluated 104 human studies on Quercetin, including 20 randomised controlled trials and 11 meta-analyses or systematic reviews; the controlled studies include 1,228 participants in total. As of 10 October 2026.

Does Quercetin help with heart and circulation? What the studies show

We evaluated 2 meta-analyses or systematic reviews, 6 controlled studies and 7 further studies; the controlled studies include 283 participants in total. Result of the controlled studies: mixed. Strength of evidence under our published rules: high. Sources: [161415](#)

Does Quercetin help with inflammation and immune system? What the studies show

We evaluated one meta-analysis or systematic review, 7 controlled studies and 18 further studies; the controlled studies include 236 participants in total. Result of the controlled studies: mostly no difference. Strength of evidence under our published rules: moderate. Sources: [241518](#)

Does Quercetin help with cellular ageing? What the studies show

We evaluated 3 controlled studies and 4 further studies; the controlled studies include 220 participants in total. Result of the controlled studies: mostly improved. Strength of evidence under our published rules: moderate. Sources: [2141532](#)

Does Quercetin help with absorption and metabolism? What the studies show

We evaluated 3 controlled studies and 7 further studies; the controlled studies include 41 participants in total. Result of the controlled studies: mostly improved. Strength of evidence under our published rules: moderate. Sources: [26273237](#)

Does Quercetin help with physical performance and recovery? What the studies show

We evaluated 3 controlled studies and 4 further studies; the controlled studies include 88 participants in total. Result of the controlled studies: mixed. Strength of evidence under our published rules: low. Sources: [21223165](#)

Does Quercetin help with blood sugar and metabolism? What the studies show

We evaluated 2 controlled studies and 8 further studies; the controlled studies include 22 participants in total. Result of the controlled studies: mostly no difference. Strength of evidence under our published rules: unclear. Sources: [7243052](#)

What is quercetin and in which forms is it studied?

Quercetin is a plant pigment from the group of flavonols. Among others, quercetin aglycone, isoquercetin, rutin, quercetin phytosome and enzymatically modified isoquercetin are studied. The form is important because aglycone, glycosides and phospholipid complexes are absorbed differently.

What do human studies show about the heart and circulation?

For the heart and circulation, quercetin lowered blood pressure in a meta-analysis of placebo-controlled studies, especially at higher doses ⁶. In sickle cell disease, isoquercetin lowered blood clotting and platelet aggregation compared with baseline; for the primary endpoint P-selectin, it did not differ from placebo ¹⁹.

Is there evidence for an effect on inflammation and the immune system?

The findings are inconsistent: several controlled studies found no difference from placebo for inflammation and immune markers ¹⁸²⁴³⁰; lower CRP values were reported mainly by studies on mixed preparations ¹³²⁹.

How is quercetin absorbed and what does that mean for the form?

Small controlled studies on various formulations are available on absorption. One randomized controlled trial found better oral absorption for a quercetin phytosome with phospholipids from food-grade lecithin than for unformulated quercetin ²⁷, and another for a hybrid hydrogel formulation with fenugreek galactomannans ²⁶. The results apply only to the respective formulation.

How safe is quercetin in the studies?

The studies predominantly report good tolerability; serious adverse events were not attributed to the preparation ¹⁸¹⁹. Occasionally, mild gastrointestinal complaints occurred, in one study with muscadine grape skin extract, which contains ellagic acid and resveratrol in addition to quercetin ⁴⁸. In women before a bypass operation, quercetin showed rather pro-inflammatory changes in one study ¹⁵; according to a review, long-term safety data are still pending ⁵⁷.

Sources

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