Medication & Supplement Quick Reference

What Each One Does — One-Page Summary

Last updated: 2026-01-21

Stimulants (Max 3 pills/day total)

Rilatine MR 30 mg: Dopamine/norepinephrine boost for cognitive function. NEVER with magnesium carbonate/antacids (causes dose dumping). Masks energy—use HR monitor.

Provigil 100 mg: Wakefulness support. No supplement interactions. Also masks energy.

Immune & Core Energy

LDN 3 mg: Immune modulation, anti-inflammatory. 4–12 weeks for effect.

Acetyl-L-Carnitine 1000 mg: ROOT CAUSE FIX. Opens carnitine shuttle for fat-burning. 4–6 weeks initial, 3–6 months maximum.

CoQ10 Ubiquinol 100 mg: Electron transport chain "spark plug." Needs dietary fat or ¡10% absorption.

Riboflavin B2 400 mg: Fat-burning cofactor. Migraine prevention. Needs dietary fat. 4–12 weeks for migraines.

Urolithin A + NAD+: Mitochondrial health (mitophagy + cofactor priming).

Vitamins & Minerals

D-Cure 25000 U.I. (weekly): Immune, bone, mood. MUST have dietary fat or stays deficient. Chronic deficiency indicates fat malabsorption.

BEFACT FORTE: B-complex for energy metabolism cofactors.

Vitamin C 500 mg: Antioxidant, enhances iron absorption.

Magnesium Glycinate 300–400 mg (bedtime): Muscle relaxation ("off switch"), ATP synthesis cofactor, nocturnal cramp prevention. Glycinate form safe 6–8 hrs after stimulants.

FerroDyn FORTE: Iron for oxygen transport. Best with vitamin C, separate from calcium/magnesium by 2–4 hours. Avoid coffee/tea for 1 hour.

Vitamin A 5000 IU: Vision support (rhodopsin regeneration). Needs dietary fat.

Vision Support

Lutein 10–20 mg + Zeaxanthin 2–4 mg: Macular protection, blue light filter. Need fat.

Taurine 500–1000 mg: Retinal cell function (water-soluble).

DHA 500–1000 mg: Retinal membrane structure. Needs fat.

Electrolytes

Custom solution 250 mL, 2×/day: Sodium expands blood volume, potassium enables muscle relaxation, glucose provides quick energy when fat-burning impaired. Afternoon dose clears lactic acid.

Fat Malabsorption Support

MCT Oil 1 tbsp/day: IMMEDIATE ENERGY BYPASS. C8/C10 fats bypass broken carnitine shuttle. Go straight to liver for energy. Support fat-soluble vitamin absorption. Start 1 tsp, increase slowly. Take 1 tsp before bed for nocturnal ATP support.

Digestive Enzymes (5000–10000 lipase units): Compensate for low pancreatic enzyme production. Take before meals with fat-soluble vitamins.

Nocturnal ATP Depletion

D-Ribose 5 g (bedtime + morning): Direct ATP building block. Replenishes ATP overnight when fat-burning blocked. Reduces nocturnal cramps, morning exhaustion. 2 weeks to assess.

Critical Interactions

NEVER Together

Rilatine MR + Magnesium carbonate/oxide/antacids
Causes premature drug release → HR spikes
Separation: 2–4 hours minimum (bedtime ideal)

Provigil: No supplement interactions
Magnesium glycinate at bedtime: Safe (6–8 hrs after stimulants)

Iron ↔ Calcium/Magnesium: Separate 2–4 hours (compete for absorption).

Fat-Soluble (MUST have fat)

CoQ10, Riboflavin B2, Vitamin D3, Vitamin A, Lutein, Zeaxanthin, DHA

Without fat: ¡10% absorption!

Good fats: MCT oil, olive oil, fatty fish, avocado, nuts, eggs

The Energy Strategy

Root Problem: Blocked carnitine shuttle prevents fat-burning
3-Part Solution:
1. Immediate Bypass (MCT oil + D-Ribose)
- MCT oil bypasses broken shuttle
- D-Ribose replenishes ATP directly
- Effect: Immediate energy, reduced cramps

2. Root Repair (Acetyl-L-Carnitine)
- Opens carnitine shuttle (4–6 weeks)
- Restores fat metabolism (3–6 months max)

3. System Optimization (CoQ10, B2, Mg)
- CoQ10: electron transport chain
- Riboflavin: fat-burning cofactor
- Magnesium: ATP synthesis + muscle relaxation

Fat Malabsorption Fix:
- MCT oil + enzymes ensure vitamin absorption
- Fixes chronic vitamin D deficiency

Timelines

Days 1–7: MCT + D-Ribose immediate effect

Weeks 4–6: Acetyl-L-carnitine begins opening shuttle

Months 2–3: Retest vitamin D levels

Months 3–6: Full fat-burning restoration

Riboflavin migraines: 4–12 weeks

Key Warnings

- **Stimulants mask energy:** Trust HR monitor, not feelings
- **Max 3 stimulant pills/day:** Both medications combined
- **Fat essential:** D3, CoQ10 won't absorb without it
- **MCT oil:** Start slow (1 tsp) to avoid diarrhea
- **Coconut oil ≠ MCT oil:** Only pure C8/C10 works
- **HR pacing:** $(220 - \text{age}) \times 0.55$ to avoid lactic acid

Medication & Supplement Guide

What Each One Does and Why You're Taking It

Last updated: 2026-01-21

Stimulant Medications — For Wakefulness & Cognitive Function

Rilatine MR (Methylphenidate) 30 mg

What it does:

- Increases dopamine and norepinephrine in the brain
- Improves alertness, focus, and cognitive function
- Helps counteract severe fatigue and brain fog

Why you're taking it: ME/CFS causes severe cognitive impairment and fatigue. This medication provides temporary cognitive support to maintain function.

Important:

- Modified-release formulation — NEVER with magnesium carbonate/antacids (causes dangerous "dose dumping")
- Masks true energy levels — trust heart rate monitor, not feelings
- Can trigger migraines (vasoconstriction) — riboflavin helps prevent this
- Maximum 3 pills/day total (combined with Provigil)

Provigil (Modafinil) 100 mg

What it does:

- Promotes wakefulness through different mechanism than methylphenidate
- Improves sustained alertness and reduces "sleepiness"
- Less stimulating than methylphenidate but longer-lasting

Why you're taking it: Provides complementary wakefulness support; can be used alone or combined with methylphenidate depending on daily needs.

Important:

- No significant supplement interactions — safe to take with everything
- Also masks true energy levels — heart rate monitoring essential
- Can trigger migraines (vasoconstriction) — riboflavin helps
- Maximum 3 pills/day total (combined with Rilatine)

Immune Modulation

LDN (Low-Dose Naltrexone) 3 mg

What it does:

- Modulates immune system by temporarily blocking opioid receptors
- Reduces inflammation throughout the body
- May improve energy and reduce pain over time

Why you're taking it: ME/CFS involves immune dysfunction and chronic inflammation. LDN helps rebalance the immune system.

Timeline: 4–12 weeks to assess effectiveness. Started 2026-01-05, increasing to 4–4.5 mg after current stock.

Mitochondrial Support — The Core Energy System

Acetyl-L-Carnitine 1000 mg

What it does:

- Opens the "carnitine shuttle" — transports long-chain fats into mitochondria for energy production
- Acetyl form crosses blood-brain barrier for cognitive support
- Addresses root cause of fat metabolism dysfunction

Why you're taking it:

- You cannot burn stored body fat for energy (carnitine shuttle blocked)
- This causes "running on empty" sensation despite adequate calorie intake
- Also targets muscle cramps (ATP depletion from failed fat oxidation)
- Supports cognitive function (brain energy metabolism)

Timeline: 4–6 weeks for initial effect; 3–6 months for maximum benefit. This is the **root cause fix**.

CoQ10 Ubiquinol 100 mg

What it does:

- "Spark plug" in the electron transport chain (mitochondrial energy production)
- Antioxidant protecting mitochondrial membranes
- Essential cofactor for ATP synthesis

Why you're taking it: Mitochondrial dysfunction means inefficient ATP production. CoQ10 supports the energy production machinery.

Important: Fat-soluble — MUST take with dietary fat (eggs, olive oil, MCT oil, nuts) or absorption is ¡10%.

Riboflavin (Vitamin B2) 400 mg

What it does:

- Precursor to FAD (flavin adenine dinucleotide) — essential for beta-oxidation (fat burning)
- Critical cofactor in electron transport chain
- Migraine prevention (proven at 400 mg/day)

Why you're taking it:

- Supports fat metabolism (works with acetyl-L-carnitine)
- Prevents migraines triggered by stimulant vasoconstriction
- Essential for mitochondrial energy production

Important: Fat-soluble — take with lunch or dinner containing fat. Migraine prevention takes 4–12 weeks.

Urolithin A + NAD+ (Joiavvy) 2 capsules

What it does:

- Urolithin A: Promotes mitophagy (removal of damaged mitochondria) and mitochondrial biogenesis (creating new mitochondria)
- NAD+: Cofactor that "primes" the energy cycle; declines with age and disease

Why you're taking it: Supports mitochondrial health and function at the cellular level.

Vitamins & Minerals

D-Cure 25000 U.I. (Vitamin D3) — Weekly

What it does:

- Supports immune function, bone health, mood regulation
- Anti-inflammatory effects
- Essential for calcium absorption and cellular function

Why you're taking it: Chronic vitamin D deficiency for years despite daily 3000 U.I. supplementation. Strongly suggests fat malabsorption (common in ME/CFS).

Important:

- Fat-soluble — MUST take with fatty meal (fish, olive oil, avocado, cheese) or will remain deficient
- Weekly high-dose may overcome absorption issues better than daily low-dose
- Needs follow-up labs in 2–3 months to verify effectiveness

BEFACT FORTE (B-Complex)

What it does:

- Provides full spectrum of B vitamins
- B vitamins are cofactors in energy metabolism, neurotransmitter synthesis, and methylation

Why you're taking it: Supports energy production and neurological function. Complements riboflavin B2.

Vitamin C 500 mg

What it does:

- Antioxidant support
- Enhances iron absorption (critical synergy)
- Supports immune function and collagen synthesis

Why you're taking it: Taken with iron to maximize iron absorption for addressing iron deficiency.

Magnesium Glycinate 300–400 mg (Bedtime)

What it does:

- "Off switch" for muscle contraction — enables muscle relaxation
- Critical cofactor for 300+ enzymatic reactions including ATP synthesis
- Supports sleep quality

Why you're taking it:

- Prevents nocturnal muscle cramps (low ATP causes muscle "lock-up")
- Supports energy production (cofactor for PDH and TCA cycle)
- Taken at bedtime to target overnight cramps when ATP is lowest

Important:

- Glycinate form has minimal pH effect (safe for bedtime, 6–8 hours after stimulants)
- Never use magnesium carbonate/oxide — causes methylphenidate dose dumping

FerroDyn FORTE (Iron)

What it does:

- Essential for hemoglobin production (oxygen transport)
- Cofactor in energy metabolism and neurotransmitter synthesis

Why you're taking it: Addresses iron deficiency which worsens fatigue and reduces oxygen delivery to tissues.

Important:

- Best absorbed on empty stomach with vitamin C
- Separate from calcium/magnesium by 2–4 hours (compete for absorption)
- Avoid coffee/tea for 1 hour (tannins block absorption)

Vitamin A 5000 IU (to start)

What it does:

- Essential for rhodopsin regeneration (night vision)
- Supports retinal function and overall eye health
- Immune function support

Why you're taking it: Part of vision support protocol targeting energy-dependent vision deterioration.

Important: Fat-soluble — take with olive oil or fatty meal.

Vision Support Protocol

Lutein 10–20 mg & Zeaxanthin 2–4 mg

What they do:

- Macular carotenoids concentrated in the retina
- Filter harmful blue light
- Protect photoreceptors from oxidative damage

Why you're taking them: Progressive vision impairment with energy-dependent variation suggests ciliary muscle fatigue (ATP depletion). These support retinal structure and function.

Important: Fat-soluble — take with morning CoQ10 or evening meal with fat.

Taurine 500–1000 mg

What it does:

- Abundant in photoreceptors
- Supports retinal cell function and protects against oxidative stress

Why you're taking it: Supports retinal metabolism and may stabilize vision quality.

Important: Water-soluble — no special timing required.

DHA (Omega-3) 500–1000 mg

What it does:

- Structural component of retinal cell membranes
- Supports photoreceptor function
- Anti-inflammatory effects

Why you're taking it: Essential for retinal structure; may slow vision deterioration.

Important: Fat-soluble — take with fatty meal (or use high-quality fish oil which contains its own fat).

Electrolyte Management

Custom Electrolyte Solution (250 mL, 2×/day)

What it does:

- **Sodium**: Expands blood volume ("sponge" effect pulling water into circulation)
- **Potassium**: Enables muscle relaxation; maintains cellular electrical charge
- **Glucose**: Enhances sodium absorption via SGLT1 transporter; provides quick energy when fat-burning is impaired

Why you're taking it:

- ME/CFS typically involves low blood volume and orthostatic intolerance
- Sodium supports blood pressure and circulation
- Potassium prevents muscle cramps (the "off switch")
- Afternoon dose clears accumulated lactic acid from morning activities
- Provides glucose when fat metabolism is blocked

Formula: 7 g dry mix (sugar + Jozo low-sodium salt + table salt) in 250 mL water. Lower-sugar alternative available (4.3 g per dose).

Fat Malabsorption Support

MCT Oil 1 teaspoon–1 tablespoon daily

What it does:

- Medium-chain triglycerides (C8–C10) bypass normal fat digestion
- Absorbed directly without requiring bile acids or pancreatic lipase
- Go straight to liver for immediate energy production
- **Do NOT require the carnitine shuttle** — bypass the broken system

Why you're taking it:

- **Emergency energy bypass**: Provides fuel mitochondria can actually use right now
- Supports absorption of fat-soluble vitamins (D3, CoQ10, B2)
- Preferentially oxidized for energy, rarely stored as body fat
- Addresses nocturnal ATP depletion (take 1 tsp before bed)

Important:

- Start with 1 tsp daily, increase to 1 tbsp over 1–2 weeks
- Increase slowly — rapid escalation causes diarrhea
- Take with fat-soluble vitamins or 30–60 min before bed
- This is **NOT coconut oil** — MCT oil is extracted/concentrated C8/C10 only

Digestive Enzymes with High Lipase

What they do:

- Lipase breaks down dietary fats for absorption
- Compensates for inadequate pancreatic enzyme production (energy-dependent)

Why you're taking them: Pancreas requires energy to produce enzymes. Mitochondrial dysfunction reduces enzyme production, impairing fat digestion and absorption.

Important: Take immediately before meals containing fat-soluble vitamins. Minimum 5000–10000 lipase units per capsule.

Nocturnal ATP Depletion Support

D-Ribose 5 g (before bed + morning for 10 g/day total)

What it does:

- Simple sugar that's a direct building block of the ATP molecule
- Replenishes cellular ATP stores rapidly
- Bypasses complex metabolic pathways

Why you're taking it:

- During overnight fast, body should burn fat for ATP production
- Blocked carnitine shuttle prevents fat oxidation
- ATP progressively depletes through the night
- Low ATP causes nocturnal cramps and unrefreshing sleep
- D-Ribose provides raw material to maintain ATP overnight

Timeline: Some notice effect within days; assess at 2 weeks for nocturnal cramp reduction.

Summary: How It All Works Together

The Energy Production Strategy

Root Problem: Blocked carnitine shuttle prevents burning stored body fat for energy.
Three-Part Solution:

1. **Immediate bypass (MCT Oil + D-Ribose):**
   - MCT oil provides fat that doesn't need carnitine shuttle
   - D-Ribose directly replenishes ATP
   - Effect: Immediate energy support, reduced nocturnal cramps
2. **Root cause repair (Acetyl-L-Carnitine):**
   - Opens carnitine shuttle over 4–6 weeks
   - Enables normal fat burning (stored body fat + dietary fat)
   - Effect: Gradual restoration of fat metabolism
3. **System optimization (CoQ10, Riboflavin, Magnesium):**
   - Support the mitochondrial machinery once fuel can get in
   - CoQ10: electron transport chain function
   - Riboflavin: fat-burning cofactor
   - Magnesium: ATP synthesis cofactor; muscle relaxation

Fat Malabsorption Fix:

- MCT oil + digestive enzymes ensure fat-soluble vitamins actually absorb
- Fixes chronic vitamin D deficiency and improves CoQ10/B2 effectiveness

Vision Support:

- Addresses energy-dependent ciliary muscle fatigue
- Structural support (lutein, zeaxanthin, DHA) + metabolic support (taurine, vitamin A)

Stimulants:

- Temporary cognitive support while metabolic repair happens
- Mask true energy — use heart rate monitoring for safety