

Print This. Bring It to Your Doctor. AND Not INSTEAD OF.

CATEGORY	METFORMIN	BERBERINE
<b>Primary Mechanism</b>	AMPK activation	AMPK activation (identical pathway)
<b>A1C Reduction</b>	1.0 - 1.5%	0.5 - 0.9% (meta-analysis, 14 RCTs)
<b>Fasting Glucose</b>	Reduces 20-30%	Reduces 15-25%
<b>Liver Glucose Output</b>	Reduces hepatic gluconeogenesis	Reduces hepatic gluconeogenesis (same)
<b>Insulin Sensitivity</b>	Moderate improvement	Moderate improvement + gut benefits
<b>Gut Microbiome</b>	Some positive effects	Significant positive remodeling
<b>Common Side Effects</b>	GI distress, B12 depletion (long-term), lactic acidosis (rare)	GI distress (start low -- resolves). No B12 depletion. No lactic acidosis.
<b>Monthly Cost</b>	\$30-150 (generic) to \$400+ (brand)	\$12-15
<b>Annual Cost</b>	\$360-4,800+	\$144-180
<b>Prescription Required?</b>	Yes	No
<b>Origin</b>	Synthesized from French Lilac plant	Extracted from barberry root, goldenseal
<b>Key Study</b>	Multiple large-scale RCTs since 1957	Yin et al. (Metabolism 2008): comparable A1C + FBG reduction vs metformin in T2D

**CRITICAL WARNING: IF YOU TAKE METFORMIN**

Berberine and metformin activate the SAME pathway (AMPK). Taking both without medical supervision may lower blood sugar TOO MUCH (hypoglycemia). **ALWAYS tell your doctor before starting berberine if you take metformin or any diabetes medication.** Start at the LOW dose (500mg 1x/day). Monitor fasting glucose daily. Report any consistent drops. This is GOOD news -- it may mean your doctor can reduce your metformin dose. But let the DOCTOR make that decision based on YOUR data.

**YOUR DOSING SCHEDULE**

DAY	SUPPLEMENT	DOSE	WHEN
<b>Day 6-7</b>	Berberine only	500mg 1x/day	With breakfast. With food always.
<b>Day 8-9</b>	Berberine + Ceylon cinnamon	Berberine 500mg 2x/day + Cinnamon 1g/day	Berberine with breakfast + lunch. Cinnamon on oatmeal or in capsule.
<b>Day 10+</b>	Full stack: Berberine + Cinnamon + Chromium	Berberine 500mg 2x + Cinnamon 1g + Chromium 200mcg	All with meals. Full therapeutic stack active.

*"The leaves of the tree are for the healing of the nations." -- Revelation 22:2*

Every Dairy Product. Every Plant Replacement. Zero Ceramides.

DAIRY	PLANT REPLACEMENT	BEST BRAND TIP	BLOOD SUGAR BENEFIT
<b>Milk (drinking)</b>	Oat milk (unsweetened, fortified)	Check: fortified with calcium + D. No added sugar. Avoid "barista" versions (higher fat).	Zero saturated fat. Zero IGF-1. Zero ceramide production.
<b>Milk (cooking)</b>	Soy milk unsweetened or light coconut milk	Soy milk is closest to dairy in protein content and cooking behavior.	Soy isoflavones may improve insulin sensitivity.
<b>Cheese (sliced)</b>	Nutritional yeast flakes, avocado slices	Nutritional yeast: sprinkle on everything. Cheesy/nutty flavor. High B vitamins.	No casein inflammation. No IGF-1. B12 bonus.
<b>Cheese (melted)</b>	Cashew cheese sauce (cashews + nutritional yeast + lemon + garlic, blended)	Soak cashews 2-4 hours. Blend with nutritional yeast, lemon, garlic, turmeric, water.	Whole-food fat from cashews (monounsaturated, not saturated).
<b>Parmesan</b>	Nutritional yeast + ground walnuts + salt (pulse in blender)	Make a jar and keep in fridge. Lasts 2 weeks. Use like parmesan.	Walnuts: omega-3 anti-inflammatory. No dairy hormones.
<b>Yogurt</b>	Coconut yogurt (unsweetened, live cultures) or soy yogurt	Must say "live active cultures" on label. Plain/unsweetened only.	Still get probiotics (GLP-1 factory). No dairy estrogens.
<b>Butter (toast)</b>	Mashed avocado, almond butter, tahini	Avocado: just mash with a pinch of salt and spread.	Monounsaturated fat improves insulin sensitivity (opposite of butter).
<b>Butter (cooking)</b>	Water, vegetable broth, or minimal olive oil	Saute with broth instead of oil/butter. Works for onions, garlic, greens.	Barnard protocol: keep added fats minimal. Cook with water when possible.
<b>Cream (coffee)</b>	Oat milk, soy milk, or coconut cream (small amount)	Oat milk froths well if you want a latte texture.	Zero saturated fat in oat/soy. Coconut cream: use sparingly.
<b>Ice cream</b>	Frozen banana "nice cream" -- blend frozen bananas with berries	Freeze ripe bananas in chunks. Blend in food processor until creamy. Add berries, cocoa (small amount), or vanilla.	Natural sweetness. High potassium. High fiber. Zero added fat.
<b>Sour cream</b>	Cashew cream (soaked cashews blended with lemon + salt)	Same soak-and-blend as cheese sauce but thicker. Add more lemon for tang.	Whole-food fat. No casein. No hormones.
<b>Calcium source</b>	Kale, collard greens, bok choy, fortified plant milk, sesame seeds, almonds, figs	Kale has BETTER calcium bioavailability than milk (40% absorbed vs 32%).	Plant calcium without the inflammatory + insulin-resistance package.

*"Milk was designed for baby cows. It was never designed for adult humans -- and the body knows the difference." -- Barbara O'Neill*  
*"When we remove animal fats from the diet, the fat inside muscle and liver cells begins to clear. As it clears, insulin sensitivity returns." -- Dr. Neal Barnard, MD*

BraveWorks RN | @braveworksm | AND not INSTEAD OF