

# Diabetes Type 2 - Blood Sugar Balance: Advanced Botanical Formula

Diabetes Type 2 / Blood Sugar Balance is an advanced botanical and nutraceutical formula **designed to support healthy glucose metabolism, insulin sensitivity, and cellular energy production.** By combining traditional hypoglycemic herbs, metabolic adaptogens, and key micronutrients, this supplement helps address the multifactorial nature of type 2 diabetes and metabolic dysregulation.



# Key Benefits



## Blood Glucose Regulation

Berberine, Banaba, Cinnamon, Bitter Melon, and Gymnema are extensively studied for their ability to lower blood glucose, improve insulin sensitivity, and modulate glucose uptake.



## Insulin Signaling & Pancreatic Support

Fenugreek, Costus Pictus, and Gynostemma support pancreatic  $\beta$ -cell function and glucose-stimulated insulin secretion.



## Lipid & Inflammation Management

Red Yeast Rice, Resveratrol, Olive Leaf, and Pine Bark aid in reducing triglycerides and vascular inflammation common in insulin resistance.



## Gut & Microbiome Balance

Aloe Vera, Coptic Chinensis, and Schisandra support mucosal healing and microbial diversity—critical for metabolic endotoxemia control.

Recommended usage: 4 per day (2 in the morning, 2 at night)

# What Makes This Formula Unique

## **Multi-Pathway Blood Sugar Modulation**

Integrates insulin mimetics (Berberine, Banaba), secretagogues (Fenugreek, Gynostemma), and SGLT2-modulating botanicals (Mulberry, Bitter Melon) to influence glucose regulation at multiple levels.

## **Liver & Gut Axis Support**

Green Coffee, Nopal, and Graviola assist with hepatic glucose regulation and carbohydrate digestion, reducing postprandial glucose spikes.

## **Adaptogenic Blood Sugar Buffering**

Astragalus, Schisandra, and Notoginseng support metabolic flexibility and improve glycemic stability under stress.



# Stage-Based Analysis: How It Works

## Stage 1: 0-6 Hours (Immediate Effects)

Lowers postprandial blood sugar spikes and improves glucose uptake through fast-acting insulin-sensitizers like Berberine, Banaba, and Bitter Melon that mimic insulin and promote AMPK activation.

## Stage 3: Days to Weeks (Adaptive Effects)

Regenerates metabolic function and improves insulin signaling through Astragalus, Notoginseng, and mushroom complexes that support tissue-level regeneration and mitochondrial efficiency.

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## Stage 2: 6-24 Hours (Sustained Effects)

Maintains glycemic control and reduces inflammation with Gymnema, Mulberry Leaf, Olive Leaf, and Schisandra that inhibit sugar absorption, protect beta cells, and reduce oxidative stress.

## Stage 4: Weeks to Months (Long-Term Benefits)

Prevents complications and reduces HbA1c with Ginkgo, Gynostemma, Garlic, and Red Yeast Rice that support vascular tone, cholesterol control, and organ protection.





# Key Ingredients & Mechanisms

## **Berberine HCL**

Activates AMPK, improving glucose uptake, insulin sensitivity, and lipid metabolism. Lowers fasting glucose and insulin resistance; improves gut microbiome for better metabolic regulation.

## **Gymnema Extract**

Contains gymnemic acids that inhibit sugar absorption and regenerate beta-cells. Reduces sugar cravings, improves glycemic balance, and is clinically shown to reduce HbA1c.

## **Alpha Lipoic Acid**

Regenerates antioxidants like glutathione and vitamin C, enhances glucose uptake via AMPK activation. Improves insulin sensitivity and may alleviate symptoms of diabetic neuropathy.

# Research-Backed Benefits

## **Berberine, Banaba, and Bitter Melon**

Clinical studies show these ingredients improve insulin sensitivity and lower fasting glucose levels. Berberine has been shown to enhance insulin receptor expression via protein kinase C activation, with trials indicating it lowers fasting glucose by approximately 0.52 mmol/L.

## **Gymnema, Fenugreek, and Costus Pictus**

Research indicates these plants support beta-cell regeneration and insulin secretion. Gymnema significantly increases insulin-positive beta-cells in diabetic models, while Costus pictus demonstrates direct stimulatory effects on insulin secretion.

## **Alpha Lipoic Acid, Resveratrol, and Taurine**

These compounds improve mitochondrial function and reduce diabetic complications by enhancing antioxidant defenses and reducing oxidative stress. Clinical trials show ALA supplementation alleviates symptoms of diabetic neuropathy, nephropathy, and retinopathy.

## **Magnesium, Zinc, and B Vitamins**

Essential for insulin signaling and glucose metabolism. Magnesium deficiency leads to impaired insulin secretion and increased insulin resistance, while zinc is crucial for insulin storage and release from pancreatic  $\beta$ -cells.

# Comparative Advantage



## Comprehensive Formulation



Integrates over 40 ingredients targeting all relevant metabolic, immune, antioxidant, and vascular pathways, providing system-wide synergy rather than isolated symptom suppression.

## Bioavailability and Synergy



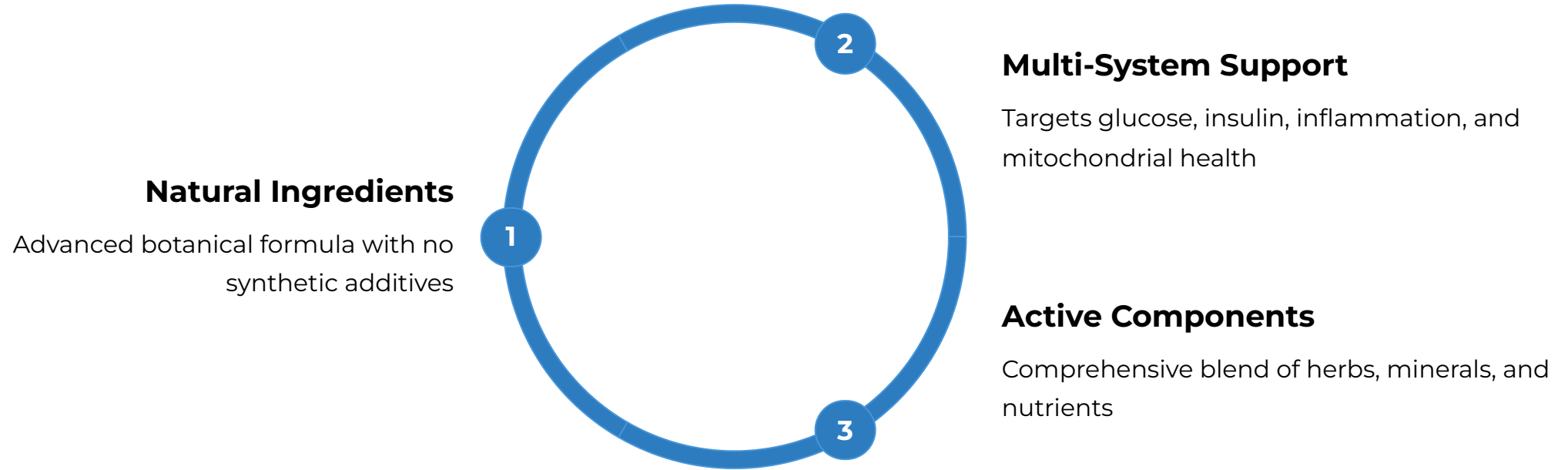
Contains enzymes, circulatory herbs, adaptogens, and antioxidants to enhance ingredient effectiveness. Combines traditional TCM, Ayurveda, and modern science for optimal nutrient stacking.

## Additional Benefits



Supports cholesterol, inflammation, blood pressure, and immune health. Designed for individuals with complex metabolic syndrome, not just elevated blood glucose.

# Summary of Benefits



Diabetes Type 2 / Blood Sugar Balance **provides immediate insulin-mimetic and sugar uptake effects, daily antioxidant and glycemic regulation, weeks of mitochondrial regeneration, and months of HbA1c reduction and organ protection. This comprehensive formula addresses the root causes of Type 2 diabetes and metabolic dysfunction across multiple systems.**