



Curcumin: A Magic Herb For Diabetes

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Curcumin is a fat-soluble molecule derived from *Haldi (Curcuma Longa)*. It is a powerful herb with multifaceted benefits in both Type-2 diabetes and Type-1 (insulin dependent) diabetes.

Some of the beneficial effects of curcumin in diabetes are as follows:

1. Reduction of insulin resistance¹
2. Lowering of high blood sugar (hyperglycaemia)²
3. Reduction of high levels of serum lipids³
4. Destruction of islet cells (especially beta cells that produce insulin)⁴

The above-mentioned benefits of the use of curcumin are supplemented with multiple benefits of the reduction of secondary effects of diabetes. Some of them are as follows:

- a. Reduction of muscle and bone disorders caused by diabetes⁵
- b. Reduction of diabetes-associated vascular disease⁶
- c. Reduction of diabetes-associated renal damage⁷
- d. Reduction of diabetes-associated nerve damage⁸
- e. Reduction of diabetes-associated liver disorders⁹

Challenge in the use of Curcumin

Most of the commercial preparation of curcumin are made in a water-soluble base. Since curcumin is a fat-soluble molecule, its bioavailability and hence its efficacy in clinical setups, has been limited.

Future of use in Diabetes

Multiple approaches have been adopted by commercial players¹⁰ that include the synthesis of curcuminoids and the development of unique formulations of curcumin such as nanoparticles, emulsions and liposomal encapsulations.

Benefit of use of Curcumin in Type-2 Diabetes

The following direct benefits of the use of curcumin in Type-2 diabetics are widely recognized

- (i) Reduction in blood sugar
- (ii) Improvement in insulin sensitivity (i.e. reduction of insulin resistance)
- (iii) Reduction in the dose of medicines
- (iv) Improved overall immunity
- (v) Reduction of diabetes-associated complications

Benefit of use of Curcumin in Type-1 (Insulin Dependent) Diabetes

The following direct benefits of the use of curcumin in Type-2 diabetics are widely recognized

- (i) Reduction in blood sugar
- (ii) Further improvement in insulin sensitivity (i.e. reduction of insulin resistance)
- (iii) Reduction in the dose of injectable insulin
- (iv) Improved overall immunity
- (v) Reduction of diabetes-associated complications

Time of Curcumin Intake

The best time of curcumin consumption (of the new and effective novel preparations) is early morning empty stomach and at bedtime.

Conclusion

Curcumin has direct beneficial effects of lower blood sugar and improving insulin sensitivity in diabetics. It is also documented that the complications of diabetes are much reduced in individuals taking a high-bioavailable preparation of curcumin.

End Notes

1. *Curcumin and insulin resistance – Molecular targets and clinical evidences* by Angelica Sarai Jumenez Osorio, Adriana Monroy, Silvestre Alavez
2. *Anti-Hyperglycemic and Insulin Sensitizer Effects of Turmeric and Its Principle Constituent Curcumin* by Zeinab Ghorbani, Azita Hekmatdoost, and Parvin Mirmiran
3. *Curcumin as a potential candidate for treating hyperlipidemia: a review of cellular and metabolic mechanisms* by Yunes Panahi, Yasin Ahmadi, Manouchehr Teymouri, Thomas P. Johnston
4. *Curcumin and Diabetes: A Systematic Review* by Dong-wei Zhang, Min Fu, Si-Hua Gao, and Jun-Li Liu
5. *Therapeutic actions of curcumin in bone disorders* by Ramin Rohanzadeh, Yi Deng, and Elise Verron
6. *The Beneficial Effects of Curcumin on Cardiovascular Diseases and Their Risk Factors* by Asal Yadollahi, Mostafa dastani, Bita Zargaran, Amir hossein Ghasemi, Hamid reza Rahimi
7. *Renoprotective effect of the antioxidant curcumin: Recent findings* by Joyce Trujillo, Yolanda Irasema Chirino, Eduardo-Molena Jijon, Ana Christina Anderica-Romeo, Edilia Tapia, Jose-Pedraza-Chaverri
8. *An Overview of Curcumin in Neurological Disorders* by S.K. Kukarni and A. Dhir
9. *Curcumin in Liver Diseases: A Systematic Review of the Cellular Mechanisms of Oxidative Stress and Clinical Perspective* by Mohammad Hosein Farzaei, Mahdi Zobeiri, Fatemeh Parvizi, Fardous F. El-Senduny, Ilias Marmouzi, Ericsson Coy-Barrera, Rozita Naseri, Seyed Mohammad Nabavi, Roja Rahimi, and Mohammad Abdollahi
10. *SNEC30, Smarter Nutrition*

About the Authors

Saguna Puri Singh is mother and caregiver of a Type-1 Diabetic child and a Senior Assistant Professor of History in Ramjas College, University of Delhi. She has researched experimented and developed innumerable low-carbohydrate recipes of foods, beverages and deserts for both type-1 and type-2 diabetics.

Dr Anurag Singh, husband of Saguna Puri Singh, has passed out from Maulana Azad Medical College and has experience in the diagnosis and management of patients of chronic, autoimmune lifestyle disorders.

