

FEBRUARY 2021

VELMA B. COX FOUNDATION

For Type II Diabetes & High Blood Pressure

Metformin and Berberine

~ By Dr. Aubrey J. Moreau, PharmD, CNC

Picture this...Imagine you are a janitor with a bucket of cleaner and you see dirt on the floor and people walking all over it...

You, the janitor, represent the pancreas. The dirt you see on the floor is sugar. Your bucket of cleaner is the insulin and the floor is your blood stream. The people walking on the floor is the rapid sugar from a bag of Hersey kisses.

When people walk on your floor, your must add the cleaner. If you see a dirtier area, you apply more cleaner. In a person with Diabetes Type 2, their janitor (pancreas) would have on a set of glasses (bad receptors) that has spots and make the floor appear dirty than it is (high blood sugar). This janitor would keep adding more cleaner (insulin) to the floor and eventually the floor will be damaged (complications of diabetes). Metformin & Berberine are substances that are taken to make the dirt appear less.

Instagram
@vbcfoundation

Facebook
facebook.com/velmab.cox.7

Email
vbc.foundation@yahoo.com





...PUTTING IT ALL TOGETHER...

INSULIN VS. BLOOD SUGAR

Insulin is a hormone that helps push the blood sugar into areas of where it is needed. There are receptors in your pancreas that call for insulin based on high sugar levels. Once the sugar levels go down, the insulin will stop being called upon. The balance works great until someone develops diabetes.

In a person with Diabetes Type 2, the system can have issues where the sensors are not communicating and both insulin and sugar levels are off balance. This can cause issues throughout the body. Medication and supplements are often used to counter this offset. Keep in mind, this is just a basic generalization. There are many other mechanisms involved, which we will not focus on.

HOW DO THEY WORK??

Metformin and Berberine are both used to place the insulin and blood sugar back into sync for your body to perform properly.

Both Metformin & Berberine have been used for centuries. Metformin slows down or stops liver production of sugar and calls on the muscle and fat tissues to take on the sugar, which is better than having it float to areas of concern, for example nerve endings. This is why some diabetics do not have feelings at the end of their toes. Berberine regulates the sugar in the same fashion by different methods as Metformin.

Fun Fact:

Metformin has been used since the 17th Century. It is derived from compounds, the French Lilac (*Galega officinalis L.*). For the past decade, it has been gaining popularity in anti-aging studies in mice and rats. Typically dosed at 850 - 1000mg twice a day. (Extended Release: 1000-2000mg daily)

Berberine has been used since 3000BC and is derived from barberry (*berberis vulgaris*). Dosing: 0.9-1.5gm, taken 2 or 3 times a day



Advantages of Metformin

- There are more large-scale evidence-based studies that prove the effectiveness of this drug.
- Metformin gets absorbed into the system easily, making the drug very effective.



Advantages of Berberine*

- There was a meta-analysis of 21 clinical trials that revealed berberine has therapeutic effects on Diabetes Type 2, hyperlipidemia and hypertension, in comparison to other therapeutic regimens.
- Does not require a prescription.

References

1. Witters LA. The blooming of the French lilac. *J Clin Invest.* 2001;108:1105–1107.
2. Wang H, Zhu C, Ying Y, Luo L, Huang D, Luo Z. Metformin and berberine, two versatile drugs in treatment of common metabolic diseases. *Oncotarget.* 2017;9(11):10135–10146. Published 2017 Sep 11. doi:10.18632/oncotarget.20807
3. Xia X, Wang H, Niu X, Wang H, Liu Z, Liu Y, Qi Z, Wang S, Liu S, Liu S. Assessment of the anti-diarrhea function of compound Chinese herbal medicine Cangpo Oral Liquid. *Afr J Tradit Complement Altern Med.* 2014;11:140–147.
4. Smith DL, Jr, et al. Metformin supplementation and life span in Fischer-344 rats. *J. Gerontol. A Biol. Sci. Med. Sci.* 2010;65:468–474.
5. Lan J, Zhao Y, Dong F, Yan Z, Zheng W, Fan J, Sun G. Meta-analysis of the effect and safety of berberine in the treatment of type 2 diabetes mellitus, hyperlipemia and hypertension. *J Ethnopharmacol.* 2015;161:69–81. Zhang Y, Li X, Zou D, et al. Treatment of type 2 diabetes and dyslipidemia with the natural plant alkaloid berberine. *J Clin Endocrinol Metab* 2008;93:2559–65.

Photo credit:

[https://unsplash.com/photos/3IWZ-d3FrZ4?](https://unsplash.com/photos/3IWZ-d3FrZ4?utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink)

[utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink](https://unsplash.com/photos/3IWZ-d3FrZ4?utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink)

***Disclaimer: Please discuss with your health care provider before beginning a new supplement or regimen.**