



Essential Oils

FOR

DIABETES

*Managing Blood Sugar One
Drop at a Time*

Dr. Brian Mowll

&

Dr. Eric L. Zielinski

Essential Oils for Diabetes

Managing Blood Sugar One Drop at a Time

By Dr. Brian Mowll

&

Dr. Eric L. Zielinski

© 2016 | All Rights Reserved

Copyright 2016 Biblical Health Publishing

All rights reserved. No part of this book may be copied, reproduced, republished, or shared in any form without prior written consent of the publisher except for the use of brief quotations in a book review.

The products and statements in this book have not been evaluated by the United States Food and Drug Administration (FDA) and are not intended to diagnose, treat, cure or prevent disease. All information provided in this book is for informational purposes only, and is not intended as a substitute for advice from your physician or other health care professional. You should not use the information in this book for diagnosis or treatment of any health problem.

Printed in the United States of America
First Printing, 2015

Biblical Health Publishing
2774 N. Cobb Pkwy
Suite 109-389
Kennesaw, GA 30152

www.BiblicalHealthPublishing.com

Ordering Information:

Quantity sales. Special discounts are available on quantity purchases by corporations, churches, and others. For details contact publisher at Orders@BiblicalHealthPublishing

Printed in the United States of America

DIABETES

29.1
MILLION

29.1 million
people have
diabetes



That's about 1 out of every 11 people

Essential Oils and Blood Sugar Balance

Diabetes is the most widespread metabolic, chronic illnesses of our time. It's estimated that 10-15% of the population has some form of diabetes, while another 8 million people likely have it without being diagnosed. (1)

Although there is no known “cure” for diabetes, it is widely accepted that diabetes can be managed with responsible care. There is also evidence that with appropriate diet and lifestyle interventions, type 2 diabetes and pre-diabetes can be prevented or even reversed. (2)

One way to improve your diabetes management is with essential oils, used in various ways to improve insulin sensitivity, manage body composition, and improve overall blood sugar control.

Understanding Diabetes

There are two main types of diabetes mellitus. Type 1, which is an autoimmune disease, has a typical onset in children and young adults. Type 2 Diabetes, which is much more common (95% of people with diabetes), is associated with insulin resistance, and has a typical onset in adulthood.

The American Diabetes Association describes Type 2 Diabetes this way:

“If you have type 2 diabetes your body does not use insulin properly. This is called insulin resistance. At first, your pancreas makes extra insulin to make up for it. But, over time it isn't able to keep up and

can't make enough insulin to keep your blood glucose at normal levels." (3)

They continue, "In type 1 diabetes, the body does not produce insulin. The body breaks down the sugars and starches you eat into a simple sugar called glucose, which it uses for energy. Insulin is a hormone that the body needs to get glucose from the bloodstream into the cells of the body." (4)

It's important to have an understanding of how diabetes works before we adjust our habits and supplemental efforts in response. For example, if you are using an essential oil with the goal of improving insulin sensitivity on most days, understanding that exercise can have a similar and even more potent result will help you make safe choices and avoid low blood sugar episodes.

On the other hand, for those who have type 1 diabetes, no amount of insulin sensitivity will correct a lack of insulin production due to damaged or dysfunctional beta cells.

Diabetes can have very serious and life-threatening complications, from poor wound healing to cardiovascular events. While essential oils are certainly not a "cure" for diabetes or its complications, they may help mitigate or alleviate some of these dangerous health problems.



Aromatherapy and Diabetes

There is significant published literature regarding substances that are beneficial for insulin sensitivity and blood sugar health, including vitamins and minerals such as biotin and chromium, as well as botanicals such as cinnamon and curcumin. Essential oils have also been studied and have shown tremendous benefit to people with diabetes – with some oils appearing to benefit the insulin response and others working to ease the symptoms that diabetes can cause.

There are a variety of ways that essential oils offer benefits to those with diabetes. (5) If you are working toward weight loss to relieve the severity of your diabetes, then diffusing essential oils that energize and potentially benefit weight loss can be effective. If your goal is to help a wound heal while diabetes hinders the process, an antiseptic and healing oil in a topical formula could do the trick.

Essential oils are best used as an integrative component of our wellness routine. For the person with diabetes who now focuses their lifestyle toward managing both the causes and symptoms of the condition, having such a versatile toolkit can be a wonderful asset.

Here are some of the most useful oils for diabetes.

Cinnamon



Probably the most well-researched botanical product for blood sugar health is cinnamon. In general, “cinnamon” refers to a group of trees whose leaves or inner bark are distilled for its essential oil or the bark harvested as a spice. There are multiple varieties of the Cinnamon tree, including *C. cassia*, which we usually refer to as simply cassia when used for its essential oil.

Much of the research performed for cinnamon and diabetes uses the powdered spice, with a great deal of data showing benefits for pancreatic support, glucose lowering, weight loss, and general diabetes prevention and management. (6)

Research is continually expanding in this area, and references to essential oils have been growing in the literature. In 2013, an evaluation of cinnamon leaf essential oil found that “all tested doses of [cinnamon essential oil] significantly lowered fasting blood glucose and fructosamine.”(7) The researchers pointed to pancreatic support as the likely mechanism for the blood sugar benefits.

Recent studies have also demonstrated cinnamon’s ability to reduce glucose levels, as well as triglyceride, LDL cholesterol, and total cholesterol levels in patients with Type 2 diabetes. [8] While the specific mechanics are still unclear, cinnamon extract has also been found to increase insulin sensitivity. [9]

Cinnamon in all its forms seems to offer benefits for blood sugar health. One advantage of the essential oil is that just a few drops may be equivalent to 5-10 grams of the powdered spice.

When using cinnamon essential oil, internal use appears to be most effective. We often recommend 1-2 drops in a capsule 2 times per day.

You can also dilute it into a carrier oil and include it in recipes. Remember, cinnamon is a strong oil and can be an irritant if not used properly.

Be sure to monitor your blood sugar carefully when using cinnamon in any form, and consult with your doctor before adjusting medication.

Coriander

Coriander (*Coriandrum Sativum*) is native to the eastern Mediterranean region and western Asia and has been used to treat digestive issues for many, many years in these regions. Traditionally people have used Coriander to heal anorexia, gas and bloat, abdominal pains and diarrhea.

Coriander oil offers dual blood glucose-lowering effects in diabetics. First, it works by increasing the secretion of insulin from the pancreas, and second, by exhibiting insulin-like activity at the cellular level.

Coriander has also been shown to reduce triglycerides levels, total cholesterol and LDL cholesterol (the lousy kind) while significantly increasing HDL cholesterol (the heavenly kind).(10)

In addition studies have shown that coriander oil has anti fungal activity and can target *Candida* (11), as well increasing blood flow and improving circulation.

Clove

Clove is another fantastic spice that not only adds tremendous flavor to both sweet and savory dishes, but also has numerous health benefits, particularly for people with diabetes. Clove has been found to lower glucose levels and total cholesterol in people with type 2 diabetes.

In animal studies, clove oil has also been found to treat inflammation. (12) While more human studies will need to be conducted, clove shows promise in reducing inflammation, which is the root of all disease in the body.

Grapefruit



Grapefruit contains a flavonoid called naringenin which has been shown to have some important affects for blood sugar regulation and overall health. It's an antioxidant, promotes carbohydrate metabolism, has anti-inflammatory affects, and helps to modulate immune function. One study showed that grapefruit extract was able to reduce LDL cholesterol by 42% and improve insulin sensitivity by 64%. (13)

Black Pepper

We are all familiar with black pepper, but did you know there are actually over 2,000 species in the pepper family? Most of these thousands of species do little for our health, so it's important to always look for the black pepper plant, also known as Piper Nigrum.

Black pepper oil has been used for thousands of years. The ancient Egyptians actually used it in their mummification process. It has also traditionally been used as an anti-oxidant, anti-inflammatory and anti-spasmodic element.

Research has determined that black pepper oil has the ability to modify aldose reductase activity, one of the mechanisms behind the development of various secondary complications of diabetes. (14)

Lemongrass

Lemongrass is one essential oil that has actually been used in traditional medicine (not just in alternative circles) to treat both diabetes and heart disease. In fact, a study published in the "Journal of Ethnopharmacology" in 2007 found that administering lemongrass to rats resulted in improved fasting glucose levels, improved cholesterol levels and lower triglyceride levels. While more research is needed, lemongrass oil is already being used successfully by many people to treat and prevent diabetes. (15)

Lavender



Lavender is well-known for its beautiful floral scent and calming effects. We've long recommended putting a few drops of lavender oil with epsom salts in a bath for healing and relaxation.

But lavender does far more than just smell great – it is highly effective at alleviating the symptoms of diabetes. A 2014 study from scientists in Tunisia (16) tested the effects of this essential oil and found it treated the following diabetic symptoms:

- Increase in blood glucose
- Metabolic disorders
- Weight gain
- Liver and kidney antioxidant depletion
- Liver and kidney dysfunction
- Liver and kidney lipoperoxidation (this happens when free radicals “steal” necessary fat molecules from cell membranes)

Another surprising find of the study was that the antioxidant activity of lavender was greater than Vitamin C!

Ylang Ylang

One of the biggest concerns of when dealing with complications of diabetes is poor circulation, which can result in poor wound healing and even amputation. Besides having an incredibly calming effect, which can help people with stress and high blood pressure, Ylang Ylang oil has also been found effective in stimulating circulation. (17)

Melissa Officinalis

Like cinnamon, melissa essential oil is considered anti-diabetic. In one study, melissa essential oil was shown to reduce markers of diabetes. Ultimately, the researchers concluded that Melissa “administered at low concentrations is an efficient hypoglycaemic agent, probably due to enhanced glucose uptake and metabolism.” (18)

Blended Oils for Insulin Sensitivity

One of the most intriguing things about essential oils is the effect of synergy, which is the phenomenon in which combinations of oils work together. That’s why making blends and formulas of oils can be more helpful than just using one here and another there.

A study published in Diabetes, Obesity, and Metabolism took noted the benefits of synergy when they studied essential oils and blood sugar. (19) Instead of isolating a single oil for their research, they

experimented with blends of multiple oils that have been suggested as beneficial for diabetes. Oils named in the summary included:

- Fenugreek
- Cinnamon
- Cumin
- Oregano

The blends were able to improve insulin sensitivity when taken internally, which can be replicated by including oil blends diluted into a carrier and consumed in capsules, drinks, and recipes.

If you want to try this formula, try diluting a few drops of fenugreek, cinnamon, and oregano oils in 2 TBSPs of black cumin seed oil as a carrier. This can be added to recipes or taken internally.

Essential Oils for Diabetes Complications

Diabetes is dangerous, but it's the complications that are truly deadly. Complications of diabetes can include:

- Cardiovascular disease
- Dental carries and infections
- Skin disorders
- Slow wound healing and blood infection
- Kidney disease
- Retinopathy, glaucoma, and other eye problems
- Peripheral neuropathy
- Sexual dysfunction
- Dementia and Alzheimer's Disease

Using what we know about essential oils to improve the health of these systems and reduce potential complications, we can reduce the impact of diabetes. Essential oils can also ameliorate the stress of coping with a lifelong chronic condition such as diabetes. (20)

Diabetes complications can occur throughout the body, and essential oils can help to reduce these issues and support the body's natural

healing process. Use anti-inflammatory, antimicrobial, and stress relieving oils as a start to your essential oil “medicine” cabinet.

Quality of life improvement for children with Type 1 Diabetes

As an autoimmune disorder with genetic and lifestyle components, type 1 diabetes can lead to depression and overwhelm. Thousands of children are impacted by type 1 diabetes, and many of them spend their lives in and out of doctor’s offices getting poked and prodded, and live with daily insulin injections.

A study published in August 2015, highlighted findings on the use of essential oils to help relieve some of this stress and physical pain for kids with diabetes. Markers for pain relief were noticeable thanks to diffused orange and lavender oils. (21)

These oils are noted for their anxiety-relieving properties, as well, which can also contribute to quality of life for kids who are faced with more than they should have to endure.

Diffusion of these essential oils can help with anxiety and even direct pain relief, and even the most gentle of oils can be helpful for this purpose. Diffuse oils during times when painful or frustrating procedures are necessary, or place drops on a small towel or other personal inhaler to use when needed.

Blood Sugar Balance Protocol



If you are taking medication for diabetes or other health conditions, please consult your prescribing physician before making any changes or adding supplements or essential oils. When adding this protocol, be aware that these oils may have a blood sugar lowering impact so be cautious with meal timing, medication use, and exercise, and monitor your blood sugar closely.

- **Cinnamon Oil:** Take 1-2 drops in a capsule 2-3 times per day
- **Coriander Oil:** Take 1-2 drops diluted in a carrier oil (like coconut oil) or in a capsule 2 times per day, morning and evening
- **Clove Oil:** Take 1-2 drops diluted in a carrier oil or in a capsule 2 times per day, morning and evening
- **Grapefruit Oil:** Take 1-2 drops diluted in a carrier oils (like sesame oil) or in a capsule 2 times per day, morning and evening
- **Lavender Oil:** Use topically diluted or in a diffuser as desired to create a calming effect or use several drops in hot water with epsom salts to make a calming bath.

Other oils described in this manual can be used as well for improved outcomes. Each person is different, so it's best to experiment with a variety of oils.

Someday, in the not-too-distant future, essential oils will become commonplace in modern medicine for the treatment of diabetes, blood sugar dysregulation, and other chronic diseases. I have already seen how effective they can be in healing the symptoms and complications of this dysfunction. Consider asking your doctor or naturopath to include them in your treatment plan, or work with a health coach who can help you implement essential oils into your diabetes care program.

Resources:

- (1) <http://www.cdc.gov/features/diabetesfactsheet/>
- (2) R. Taylor, Type 2 Diabetes Etiology and Reversibility. *Diabetes Care* April 2013 vol. 36 no. 4 1047-1055.
- (3) <http://www.diabetes.org/diabetes-basics/type-2/?loc=db-slabnav#sthash.6fetMoNB.dpuf>
- (4) <http://www.diabetes.org/diabetes-basics/type-1/?loc=db-slabnav#sthash.xW6GjTEK.dpuf>
- (5) J Buckle, Diabetes and Aromatherapy. *Diabetes Spectrum* August 2001 vol. 14 no. 3 124-126
- (6) <http://www.ncbi.nlm.nih.gov/pubmed/20513336>
- (7) Shih-Chieh Lee, et al., Chemical Composition and Hypoglycemic and Pancreas-Protective Effect of Leaf Essential Oil from Indigenous Cinnamon (*Cinnamomum osmophloeum* Kanehira), *J. Agric. Food Chem.*, 2013, 61 (20), pp 4905–4913
- (8) Cinnamon intake lowers fasting blood glucose: meta-analysis, *J Med Food* 2011 Sep;14(9): 884-9. doi: 10.1089/jmf.2010.0180. Epub 2011 Apr 11
- (9) Cinnamon: Potential Role in the Prevention of Insulin Resistance, Metabolic Syndrome, and Type 2 Diabetes, *J Diabetes Sci Technol.* 2010 May; 4(3): 685–693.
- (10) The cholesterol lowering property of coriander seeds (*Coriandrum sativum*): mechanism of action, *J Environ Biol* 2008 Jan;29(1):53-6
- (11) *Coriandrum sativum* L. (Coriander) Essential Oil: Antifungal Activity and Mod of Action on *Candida* spp., *PLOSone*, June 5, 2014.
- (12) Experimental evaluation of anti-inflammatory, antinociceptive and antipyretic activities of clove oil in mice, *Libyan J Med* 2015 Sep 1;10:28685. doi: 10.3402/ljm.v10.28685. eCollection 2015
- (13) Transcriptional Regulation of Human and Rat Hepatic Lipid Metabolism by the Grapefruit Flavonoid Naringenin
- (14) Jonathan Goldwasser, et al., *PLoS One* August 25, 2010. Dietary sources of aldose reductase inhibitors: prospects for alleviating diabetic complications, *Asia Pac J Clin Nutr* 2008;17(4):558-65
- (15) http://www.ethnopharmacology.org/ISE_journal.htm
- (16) Lavender (*Lavandula stoechas* L.) essential oils attenuate hyperglycemia and protect against oxidative stress in alloxan-induced diabetic rats, *Lipids Health Dis.* 2013; 12: 189
- (17) Effects of Ylang-Ylang aroma on blood pressure and heart rate in healthy men, *J Exerc Rehabil.* 2013 Apr; 9(2): 250–255
- (18) Chung MJ, et al., Anti-diabetic effects of lemon balm (*Melissa officinalis*) essential oil on glucose- and lipid-regulating enzymes in type 2 diabetic mice. *Br J Nutr.* 2010 Jul;104(2):180-8
- (19) Talpur N, et al., Effects of a novel formulation of essential oils on glucose-insulin metabolism in diabetic and hypertensive rats: a pilot study. *Diabetes Obes Metab.* 2005 Mar; 7(2):193-9.
- (20) Awanish Pandey et al., Alternative therapies useful in the management of diabetes: A systematic review. *J Pharm Bioallied Sci.* 2011 Oct-Dec; 3(4): 504–512.
- (21) Małachowska B, et al., Essential oils reduce autonomous response to pain sensation during self-monitoring of blood glucose among children with diabetes.. *J Pediatr Endocrinol Metab.* 2016 Jan 1;29(1):47-53.

About the Authors



Dr. Brian Mowll is the founder and medical director of SweetLife® Diabetes Health Centers and serves clients worldwide as The Diabetes Coach™. He is a certified diabetes educator (CDE) and was one of the first doctors to be certified to practice functional medicine by the prestigious Institute for Functional Medicine.

Since 1998, Dr. Mowll has been helping people with all forms of diabetes properly manage their complex health conditions. Additionally, with type 2 diabetes, pre-diabetes and metabolic syndrome, his goal is to not just manage, but to reverse these conditions using a natural, personalized lifestyle approach. Dr. Mowll has spent over 20 years studying and applying clinical nutrition, physical activity, lifestyle management, functional medicine and diabetes self-management education. He is a prolific writer, blogger and speaker. Dr. Mowll treats clients locally in the greater Philadelphia area and nationally through his acclaimed Diabetes Coach™ program.

Dr. Mowll Around the Web:

<http://drbrianmowll.com>
<https://www.facebook.com/sweetlifecenters>
<https://twitter.com/drmowll>



Founder of DrEricZ.com, **Dr. Eric Zielinski** is a sought-after Biblical Health educator, author and motivational speaker. Inspired by the timeless principles in the Bible, Dr. Z's mission is to provide people with simple, evidenced-based tools that they need to experience the Abundant Life. By creating programs like Beat Cancer God's Way and hosting online events such as the Essential Oils Revolution and the Heal Your Gut Summit, Dr. Z educates people in natural remedies and empowering life strategies. He lives in Atlanta with his wife and three children.

Dr. Z Around the Web:

<https://www.facebook.com/drericz>

<http://www.pinterest.com/drericz/>

<https://twitter.com/DrEricZielinski>

<https://instagram.com/drericz/>