



**Nutra Biotics™**

— For Better Health —



**divitiz™**  
Lowers Blood Sugar Safely

World's First Vitamin Supplement for  
Prediabetes and Diabetes

# PREDIABETES

## COULD IT BE YOU?

**1 IN 3**  
ADULTS HAVE  
PREDIABETES



### RISK FACTORS

- Sedentary Lifestyle
- History of Gestational Diabetes
- Being Overweight
- Family History

### HIGH BLOOD SUGAR CAN LEAD TO COMPLICATIONS



### WHAT IS PREDIABETES?

Your sugar is slightly higher than it should be (fasting glucose between 100-125 and/or HBA1C between 5.7-6.4 )

Increased risk for developing diabetes

### WARNING SIGNS

- Excessive thirst and urination
- Numbness in hands and feet
- Most have no symptoms



## PROGRESSION TO DIABETES CAN BE REVERSED



## WHAT IS TYPE 2 DIABETES

Type 2 diabetes is caused by diet and lifestyle changes - eating high calorie food, lack of exercise, obesity, family history and high stress are the common causes.

High carbohydrate foods lead to high blood sugar.

Normally upon eating, pancreas release insulin which then triggers muscle taking up glucose for energy and lowering blood sugar level.

Age, stress, sedentary lifestyle, over-eating make the muscle not responding to insulin (insulin resistance) which leads to high blood glucose and eventually type 2 diabetes.

## PROGRESSION FROM HEALTHY GLUCOSE LEVELS TO TYPE 2 DIABETES

### **NORMAL/HEALTHY :**

Fasting blood glucose is less than 100 mg/dl

### **PRE DIABETES :**

Fasting blood glucose is between 100-125 mg/dl consistently

### **TYPE 2 DIABETES :**

If pre- diabetes is left unchecked Fasting blood glucose goes to > 125 mg/dl

**Safe supplements and changes in lifestyle can prevent progression to type 2 diabetes**

**Safe supplements, lifestyle changes and medicines can help maintain healthy blood glucose levels**

# KNOW ABOUT

# TYPE 1 & TYPE 2 DIABETES

## TYPE 1 DIABETES

- Symptoms usually can be seen in childhood or young adulthood
- Episodes of low blood sugar (Hypoglycemia) are common
- Accounts for 5%-11% of all diabetic diagnoses
- Immune system eliminates insulin production
- Cannot be reversed

## TYPE 2 DIABETES

- May not exhibit symptoms before diagnosis
- Usually no episodes of low blood sugar levels
- Typically diagnosed in adulthood (Not Always)
- Insulin Resistance
- May be prevented / delayed

## Glycated hemoglobin (A1C) test

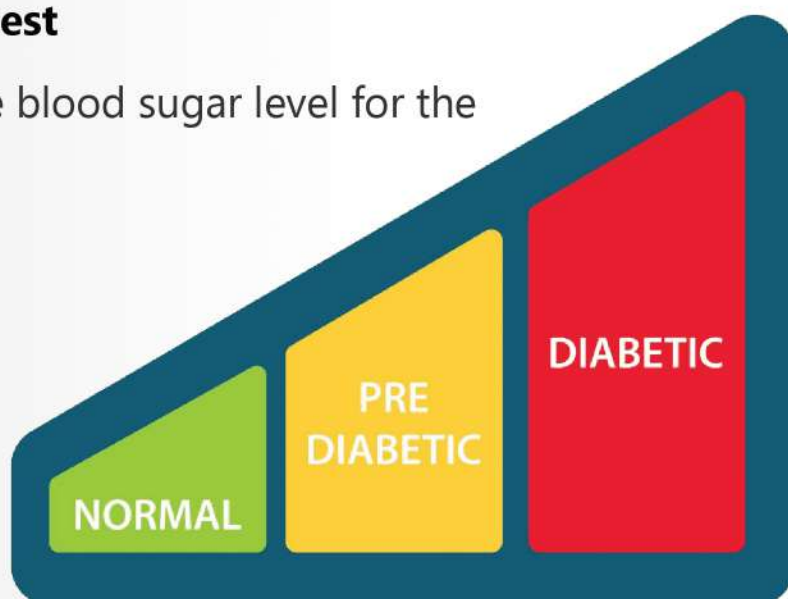
This test indicates your average blood sugar level for the past 2 to 3 months.

In General :

Below 5.7% is normal

Between 5.7% and 6.4% is diagnosed as prediabetes

6.5% or higher on two separate tests indicates diabetes



Certain conditions can make the A1C test inaccurate — such as if you're pregnant or have an uncommon form of hemoglobin.

# Pre-Diabetics are generally recommended diet and exercise regimen – No drugs are typically used

## UNITED STATES (ADA)

7% loss of initial weight

150 min/wk moderate exercise

No specific diet recommendations, (intensive behavioral management to achieve 7% weight loss goal)

## EUROPE

(European Multidisciplinary Consortium)

5% to 7% loss of initial weight

30 min/day moderate exercise

15g fibre / 100 kcal,  
35% of total energy as fat,  
10% total energy as saturated fat or trans fat

**Weight :** Being overweight is a primary risk factor for prediabetes. The more fatty tissue you have — especially inside and between the muscle and skin around your abdomen — the more resistant your cells become to insulin.

**Waist size :** A large waist size can indicate insulin resistance. The risk of insulin resistance goes up for men with waists larger than 40 inches and for women with waists larger than 35 inches.

**Diet :** Eating red meat and processed meat, and drinking sugar-sweetened beverages, is associated with a higher risk of prediabetes.

**Inactivity :** The less active you are, the greater your risk of prediabetes.

**Age :** Although diabetes can develop at any age, the risk of prediabetes increases after age 45.

**Family history :** Your risk of prediabetes increases if you have a parent or sibling with type 2 diabetes.

**Race or Ethnicity :** Although it's unclear why, certain people — including Black, Hispanic, American Indian and Asian American people — are more likely to develop prediabetes.

**Polycystic ovary syndrome :** Women with this common condition — characterized by irregular menstrual periods, excess hair growth and obesity — have a higher risk of prediabetes.

**Sleep :** People with obstructive sleep apnea — a condition that disrupts sleep repeatedly — have an increased risk of insulin resistance. People who are overweight or obese have a higher risk of developing obstructive sleep apnea.

**Tobacco Smoke :** Smoking may increase insulin resistance and can increase the risk of type 2 diabetes in people with prediabetes. Smoking also increases your risk of complications from diabetes.

# WORLD'S FIRST PROPRIETARY VITAMIN COMPOSITION WHICH LOWERS BLOOD SUGAR SAFELY

- 01 Helps maintain glucose levels
- 02 Glucose control in prediabetes & type2 diabetes
- 03 Improves glucose metabolism
- 04 Improves muscle glucose uptake
- 05 Safe combination of 2 vitamins and lipoic acid that can be used along with diet, exercise and other medicines



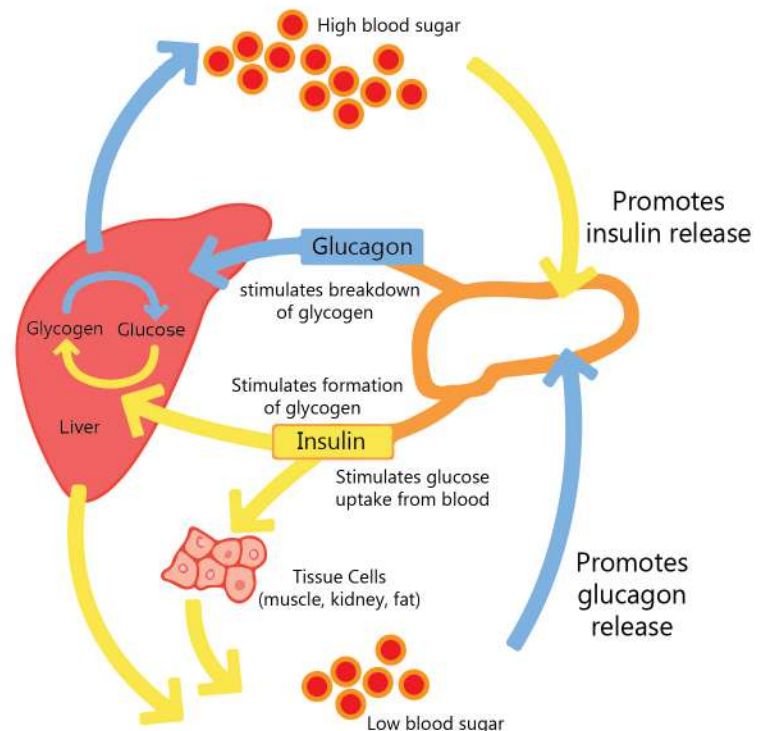
## INGREDIENTS

<b>Vitamin D3 (Cholecalciferol)</b>	<b>500 IU -- 83.33% *</b>
<b>Niacinamide</b>	<b>12 mg -- 85.71% *</b>
<b>Alpha Lipoic Acid</b>	<b>50 mg**</b>

\* RDA : Indian Recommended Daily Allowance  
 \*\* Indian RDA not established

1. Insulin allows muscles to take up glucose and lower blood glucose

2. Supplements that improve muscle glucose uptake and utilization will help maintain better glucose control



# HIGH UNMET NEED FOR R & D BASED NEW GLUCOSE LOWERING SUPPLEMENTS

Pre-diabetes (individuals who are prone to higher fasting glucose) and type 2 diabetes are of high prevalence worldwide with estimated more than a billion affected individuals

Untreated high blood glucose (sugar) has severe implications like :



- Kidney failure (Nephropathy)
- Nerve damage (Neuropathy)
- Eye damage (Retinopathy)
- Stroke and Heart disease



Estimated expenditure on glucose lowering supplements is over \$20B annually

Our product can be used by normal, pre-diabetics and diabetics to help maintain healthy glucose levels

Most available products are herbal based with unknown effects - DIVITIZ is a defined product based on laboratory research

- ◇ We have designed a novel OTC product which works 9 times better to improve glucose control in laboratory studies
- ◇ Safely helps glucose control
- ◇ Patent protected
- ◇ It is a composition of two vitamins formulated in defined ratio to give ideal and synergistic effect – through triple action of its components
- ◇ A science-based combination of vitamins with laboratory evidence

DIVITIZ – A first of its kind product

## VITAMIN D3 AND GLUCOSE CONTROL - ROBUST CLINICAL EVIDENCE

**SELECTED STUDIES :** Vitamin D3 Impact in non diabetics

**EFFECTS OF VITAMIN D :** 44,161 nondiabetic individuals - significantly reduced fasting glucose by 0.11 mmol/L

**PUBLICATION :** International Journal of Endocrinology, vol. 2018, Article ID 7908764, 9 pages, 2018.

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**SELECTED STUDIES :** Vitamin D3 Impact on prediabetes

**EFFECTS OF VITAMIN D :** significant decrease in FBG [-5.0 (-12.6–2.4),  $p = 0.04$ ], 2-h blood glucose post OGTT [-11 (-49.3–26.9),  $p = 0.02$ ], Haemoglobin A1c [-0.41 (5.89, 6.55),  $p = 0.05$ ]

**PUBLICATION :** Bhat et al- Nature Scientific Reports 10, 220 (2020)

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**SELECTED STUDIES :** Vitamin D3 Reversal in prediabetics

**EFFECTS OF VITAMIN D :** significantly reduced the risk of T2DM (risk ratio [RR] 0.89 [95% CI 0.80–0.99]); The reversion of prediabetes to normoglycemia occurred in (21.2%) participants and increased reversion rate of prediabetes to normoglycemia (RR 1.48 [95% CI 1.14–1.92])

**PUBLICATION :** Diabetes Care 2020 Jul; 43(7): 1650-1658.

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**SELECTED STUDIES :** Vitamin D3 and Type 2 diabetes

**EFFECTS OF VITAMIN D :** decreased the risk of type 2 diabetes by 13% Individuals with the highest vitamin D status (>25 ng/ml) had a 43% lower risk of developing type 2 diabetes

**PUBLICATION :** European Journal of Clinical Nutrition volume 65, pages 1005–1015 (2011)

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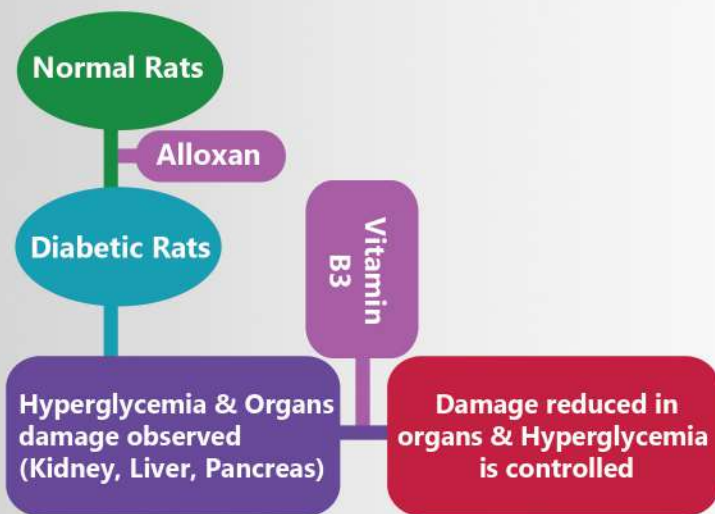
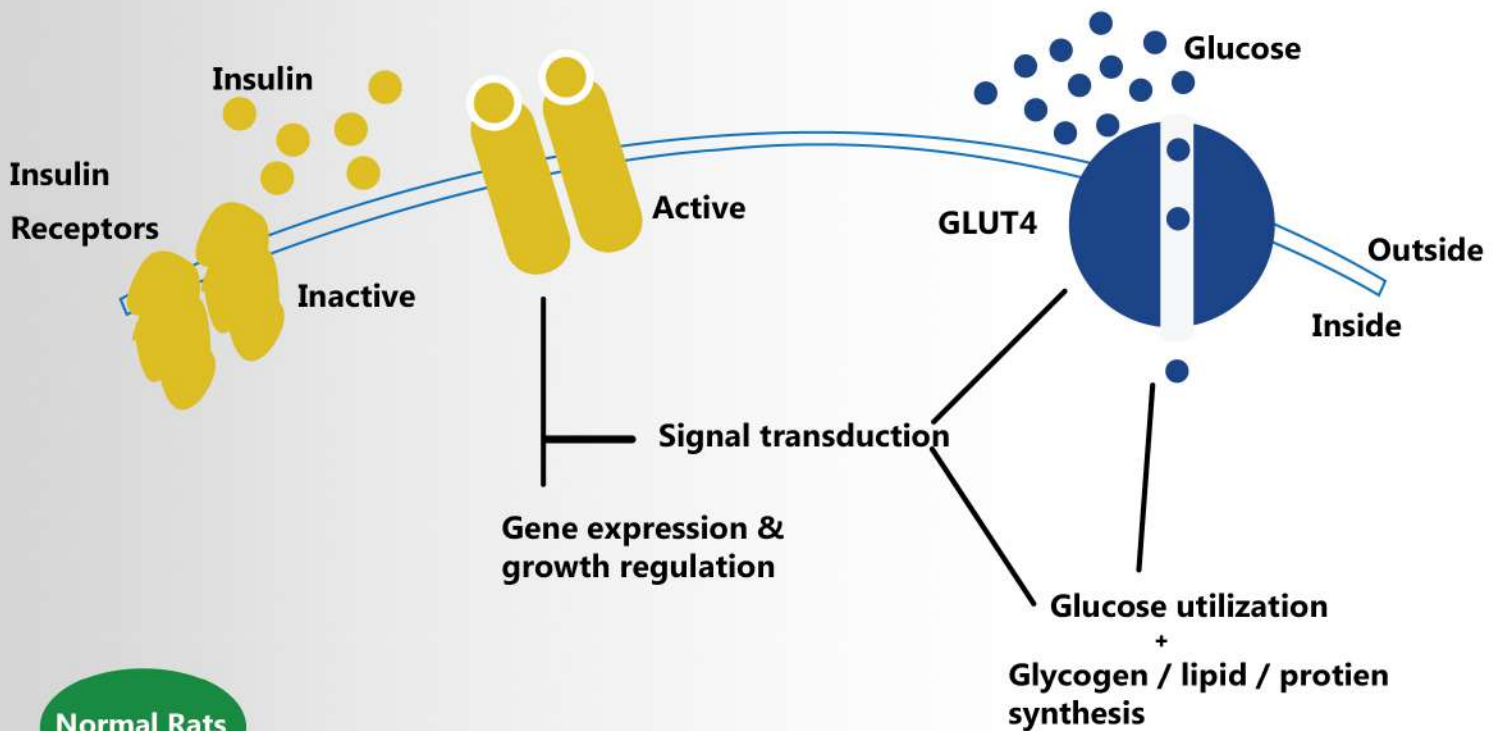
**SELECTED STUDIES :** Vitamin D3 and Type 2 diabetes

**EFFECTS OF VITAMIN D :** significant between-group differences in vitamin D at 3 months (B 42.25; 95% CI, 35.43–49.98;  $P < .001$ ) and 6 months (B 38.76; 95% CI, 31.72–45.80;  $P < .001$ ), as well as a significant mean difference in HbA1c levels

**PUBLICATION :** Front Endocrinol. Published online August 19, 2021.



# HOW DIVITIZ PRODUCT WORKS IN MUSCLE CELLS TO CONTROL GLUCOSE - TRIPLE ACTION MAKES IT MORE POWERFUL



1. Vitamin D3 increases the expression of GLUT4 which allows more intake of glucose by muscle cells
2. Niacinamide promotes glucose utilization by muscle cells
3. Lipoic Acid increases energy production

\*<https://www.sciencedirect.com/science/article/abs/pii/S0753332218328786>

## NIACINAMIDE & GLUCOSE CONTROL

Niacinamide helps your body use up the glucose for energy generation in the mitochondria where using TCA cycle glucose is metabolised to generate ATP by using niacinamide (a precursor of nicotinamide adenine dinucleotide, NAD a co-enzyme in TCA cycle). Replenishment of NAD can further boost glucose uptake and and utilisation.

## ALPHA LIPOIC ACID AND DIABETES IMPROVEMENT

- Insulin sensitization/glucose uptake
- Anti-Inflammatory
- Inhibition of advanced glycation end-products (AGE)
- Powerful antioxidant which enters mitochondria and improves glucose utilization

Alpha Lipoic Acid's role as an adjunct to proper diet and lifestyle in prediabetics and diabetics (type 1 and 2) has amassed an impressive amount of clinical evidence

### WHAT'S NOVEL ABOUT DIVITIZ ?

1. Novel synergistic action of Vitamin D3, Niacinamide and Lipoic Acid on glucose uptake by muscle cells has never been shown before
2. This combination's effect is multiple folds higher than each vitamin individually (synergistic action)
3. The combination has to be in a "fixed ratio" for it to work best – this ratio information is proprietary to us
4. Formulation of the combination is unique – Patent pending



# DIVITIZ Triple Action leads to 9 times higher increase in glucose uptake by muscle cells in laboratory studies

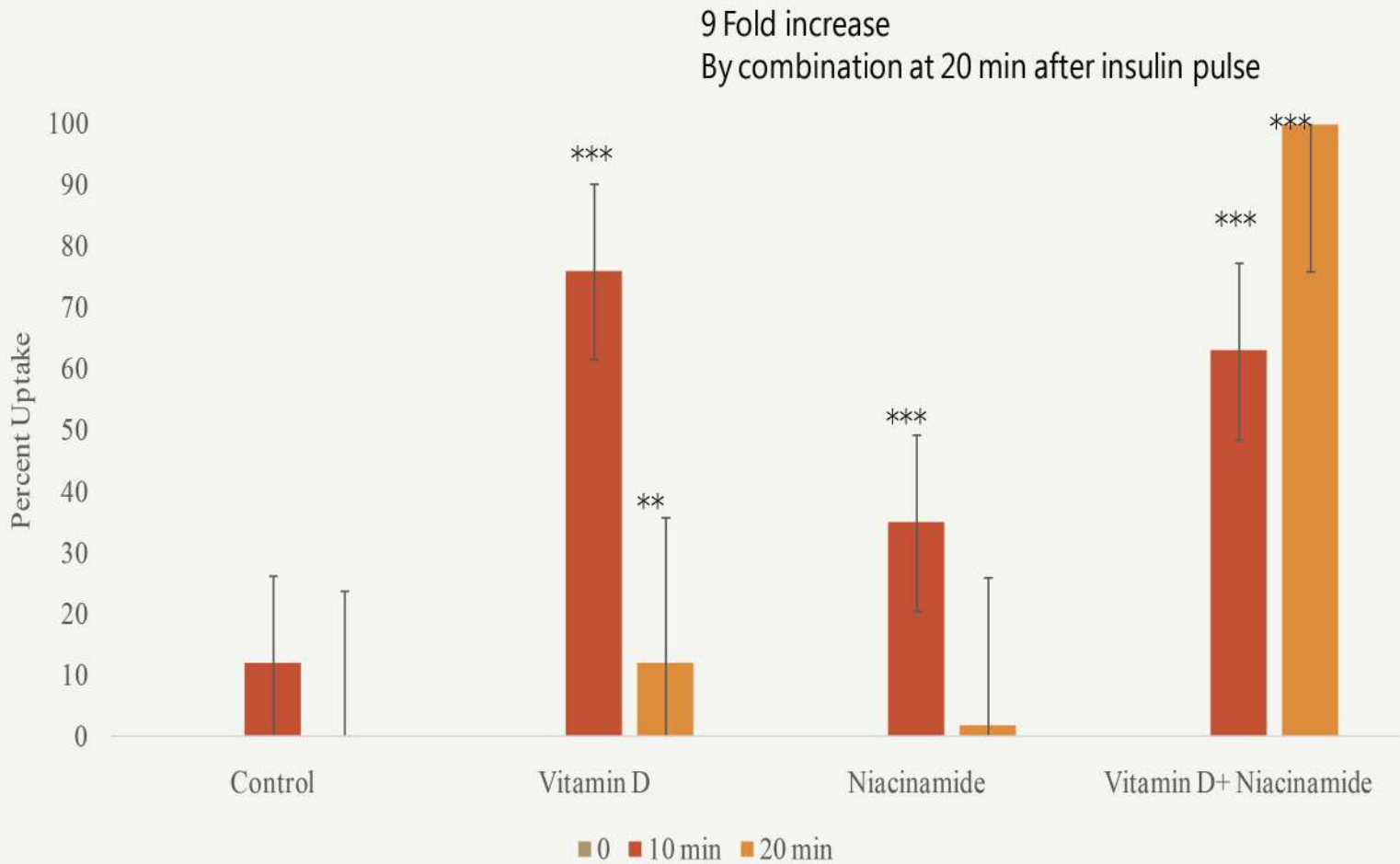


Figure 1: Percent increase in glucose uptake in presence of insulin.

Experiment conducted n=5

\*\*\* P<0.001; \*\* P<0.01; \*P<0.05. Student's t-tests were performed to compare between the percent glucose uptake shown by control, vitamin D, niacinamide and their combination at different time point.

In an animal Oral Glucose Tolerance Test (OGTT) Divitiz's efficacy was similar to metformin providing additional support in treatment of type 2 diabetes

## SOME EXAMPLES OF GLUCOSE LOWERING PRODUCTS - MOSTLY HERBAL

**PRODUCT :** Sunova Diabetic Care Formula, 60 Veg Capsules  
**COMPONENT :** Fenugreek  
**COMMENTS :** combination of herbs to regulate glucose metabolism and lower glucose

**PRODUCT :** Dr. Vaidya's Diabex Capsules Ayurvedic Capsules | Blood Sugar Control | Goodness of Methi, Karela and Neem | Pack of 2 (30 Capsules Each)  
**COMPONENT :** Methi  
**COMMENTS :** lowers glucose levels, helps glucose metabolism/helps glucose metabolism by muscles

**PRODUCT :** Sugar Knocker - Pack of 1 (90 veg capsules) - 1 month pack  
**COMPONENT :** Ayurvedic Herbs  
**COMMENTS :** helps regulate glucose control

**PRODUCTS :** Vokin Biotech Herbal Insulux For Endocrine Health & Diabetes Control (90 Capsules)  
**COMPONENT :** Herbal  
**COMMENTS :** Effective in overcoming diabetes, normalization by blood sugar

**PRODUCTS :** DIVITIZ capsules (30 capsules, 1 month's supply)  
**COMPONENT :** Vitamin combination which provides dual action glucose control  
**COMMENTS :** Front Endocrinol. Published online August 19, 2021.

bioRxiv posts many COVID19-related papers. A reminder: they have not been formally peer-reviewed and should not guide health-related behavior or be reported in the press as conclusive.

New Results

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## **Nutraceutical supplement targeting multiple molecular steps synergistically enhances muscle glucose uptake and improves in vivo oral glucose disposal**

Uday Saxena, Kranti Meher, Saranya K, Arpitha Reddy, Gopi Kadiyala, Subramanian Iyer, Subrahmanyam Vangala, Satish Chandran

doi: <https://doi.org/10.1101/2022.07.09.499288>

This article is a preprint and has not been certified by peer review

### **ABSTRACT**

Pre diabetes and type 2 diabetes are increasingly becoming rampant world wide. While there are medications to control blood glucose in type 2 diabetics, currently there are no interventions prescribed for pre diabetes. Alternate strategies to control blood glucose are needed either to act alone in pre diabetes or as supplement to the existing drugs for type 2 diabetes. We report here the targeting of critical molecular steps in muscle glucose uptake and metabolism to result in glucose lowering using a combination of safe vitamins. Our in vitro and in vivo data support the potential for using such vitamin combination for glucose control in pre diabetes and as a supplement in type 2 diabetics.

### Competing Interest Statement

The authors have declared no competing interest.

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# RESULTS WITH DIVITIZ

## 70+ Age Group

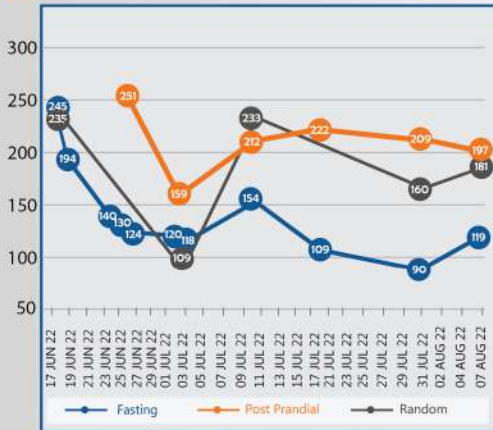
Date	FBS	PPBS	RBS
17-Jun-22	245		235
19-Jun-22	194		
24-Jun-22	140		
25-Jun-22	130		
26-Jun-22	124	251	
02-Jul-22	120		
03-Jul-22	118	159	109
10-Jul-22	154	212	233
19-Jul-22		222	
20-Jul-22	109		
31-Jul-22	90	209	160
7-Aug-22	119	197	181

## 60+ Age Group

Date	FBS	PPBS	RBS
17-Jun-22	202	337	255
19-Jun-22	139		
24-Jun-22	219		
25-Jun-22	164		
26-Jun-22	189	361	
02-Jul-22	171		
03-Jul-22	156	322	214
10-Jul-22	135	377	
19-Jul-22		307	
20-Jul-22	201		
31-Jul-22	142	280	178
07-Aug-22	141	265	156

## 40+ Age Group

Date	FBS	PPBS	RBS
17-Jun-22	215	343	107
18-Jun-22	140		
24-Jun-22			
25-Jun-22	180		
26-Jun-22	112	275	
02-Jul-22	126		
03-Jul-22	88	192	109
10-Jul-22	83	182	112
19-Jul-22			
20-Jul-22	113		
31-Jul-22	125	190	123
07-Aug-22	137	184	92



I found that this product is very useful for diabetic patients, after taking for 30 days, the fasting sugar level was reduced from 245 to 109. I am continuing now.

Taking this tablet and also taking my sugar medicine, I can see the difference in my sugar test. 30% less than normally. This really works.

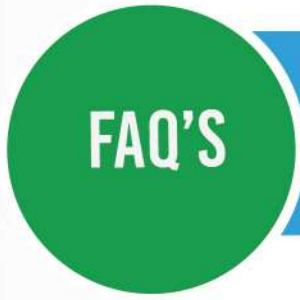
I have a very strong genetic predisposition to diabetes. Even with exercise and great care in eating, my fasting blood sugar was always high. On my doctor's suggestion, I added this supplement recently. I am now in my early 40s. My last fasting blood test showed a blood sugar of 137. My exercise and diet did not change significantly so I can't attribute the drop to anything but this supplement.



**No Side Effects**

**No Chemical Preservatives**

**Helps in Sugar Control**



## How is this product unique?

It is a science and research-based patent pending combination of vitamins that work together to control blood sugar levels.

## How does the product work?

Triple action, improves muscle glucose uptake, glucose utilization and energy production to safely lower blood glucose.

## How soon will I see an effect?

It may take up to three months to see controlled sugar levels after everyday use.

## What is the recommended dose?

One capsule after your biggest meal or as directed by your physician.

## Are there any side effects?

NO - it is composed of safe and well-established vitamins combined in a unique formulation.

## Is this prevention or cure?

Its prevention in pre-diabetics and helps lower blood glucose levels along with other medicines in diabetics.

## Can the product be given to children?

Most children do not have high blood glucose. But since the nutraceutical is composed of safe and approved vitamins, it should be acceptable. Please consult a physician.

## Can the product be advised to pregnant/breastfeeding women?

Probably yes, but check with a doctor before using.

## What if i stop using the product?

No harm will occur but your blood glucose levels may increase again.

## Can I buy the Divitiz vitamins separately and use them?

We strongly recommend to use Divitiz because it was developed after extensive R and D to provide a vitamin mixture in a very precise ratio to result in most effective sugar control.

## Will Divitiz help against complications such as Nephropathy, Retinopathy and Neuropathy?

The DCCT clinical study done in 1980's with many patients had shown that controlling blood sugar decreases the severity of above conditions. This suggests that maintaining or lowering blood sugar has a direct benefit against related complications.

**divitiz**<sup>TM</sup>  
Lowers Blood Sugar Safely



**CONTACT**

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