

# Needs of Diabetic Patients Other Than Oral Hypoglycemics or Insulin

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## Abstract

Firstly, the diabetic patients in the world nearly 10.5% of the world population ranging from the birth to 79 years (mostly the diabetes is at all ages from birth to death), so this disease must be taking the importance and priority of all countries due to the loss of economics of the individuals and countries, so in this article we explain the sum of needs of diabetic patients.

The diabetic patient firstly needs of glucose more than the healthy people due to the Prescence of glucose more than normal level in blood and no enter to the cell of tissue of the organs (the central nervous system CNS and Heart need glucose and oxygen), also the diabetic patients need other substances to enter the glucose to the cell forced and substance convert the glucose into substance other than glucose, this substance may be enzymes which need to Co-enzymes to act on glucose e.g., Riboflavin (Vit.B2) and Nicotinamide (Vit.B3) which they enter in formation of FAD and NAD which required for enzymes which act on glucose, lastly Cyanocobalamin (Vit.B12) which keeps and regenerates the nerves especially peripheral nerves.

**Keywords:** diabetes, diabetic patients, riboflavin, nicotinamide, cyanocobalamin, enzymes, insulin, oral hypoglycemics, glucose

## 1. Introduction

The diabetes it is dysfunction of metabolism of glucose, cause increase of blood glucose level in

diabetic patients. The metabolism of glucose means convert of glucose to substance other than glucose.

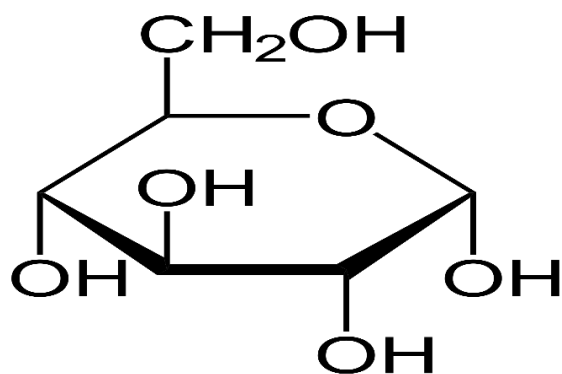
The insulin which secreted from Beta-cells of islets of Langerhans of pancreas play an important role of metabolism of glucose, hence un secretion of insulin (type-1 diabetes no insulin secretion from the birth), the little insulin secretion by times (type-2 diabetes).

The type-1 diabetic patents treated with insulin injection, while type-2 diabetic patients treated with oral hypoglycemics.

The note of diabetic coma of diabetic patients may be in hypoglycemic state or hyperglycemic state in spite, the two states is inversely to other them but the result of each un reached the glucose to the cell of organs, so this article explain the importance of metabolism of glucose which increase in the blood via entrances of glucose to the cell and metabolite to give energy which used in the cell or organs. The diabetic patients need the glucose more than the healthy people, so did not decrease the carbohydrate content in his food. So, the protocol of treatment of diabetic patient must be contain Vitamin B complex specially Riboflavin and Nicotinamide and Cyanocobalamin. The diabetic patients need glucose which produce energy to cell of the organs, Riboflavin and Nicotinamide which are important in metabolism of glucose, as well as Cyanocobalamin which is protects the nerves and keeps of them from degeneration.

## 2. Chemistry and Results

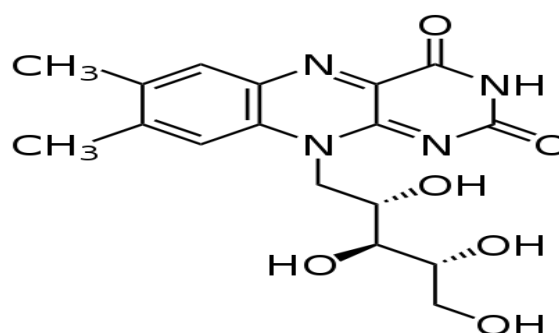
### GLUCOSE



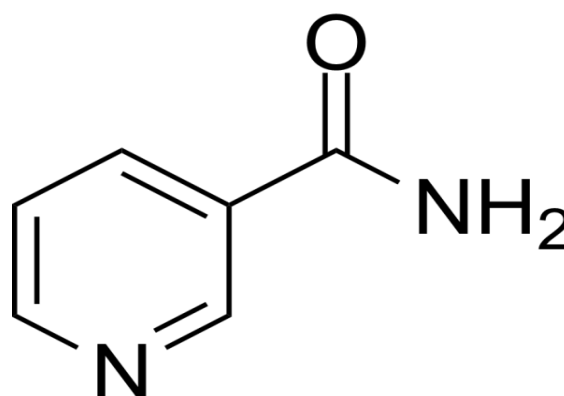
The glucose in normal state oxidized

(metabolized) inside the cell via mitochondria to produce energy, CO<sub>2</sub> and water (the main components of respiration), when the glucose not able to enter the cell, no energy produced and hence the cell will fatigue. To the metabolized of glucose need to enzymes e.g., glucose 6- phosphate dehydrogenase, citrate synthetase, iso citrate dehydrogenase, alpha-keto glutarate dehydrogenase, alpha- keto glutarate, succinate dehydrogenase, fumarase catalase, malate dehydrogenase ... etc., many of these enzymes need flavin adenine dinucleotide (FAD) and nicotinamide adenine dinucleotide (NAD) as co-enzymes these co-enzymes need to riboflavin and nicotinamide in its structure.

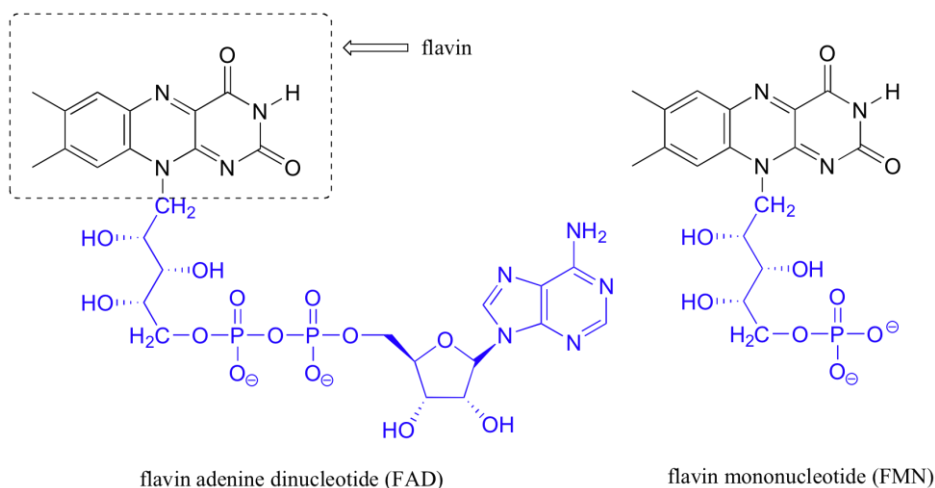
### RIBOFLAVIN



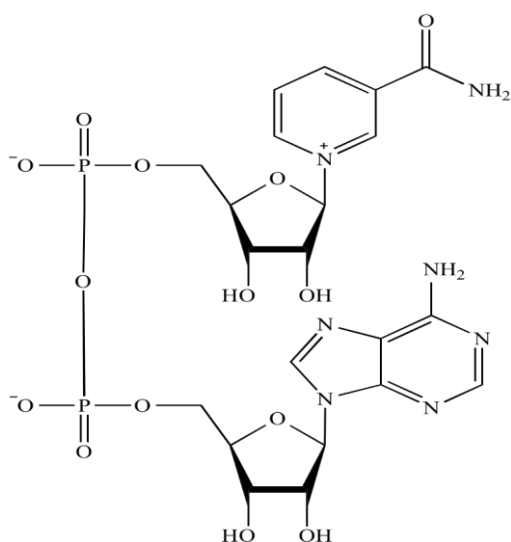
### NICOTINAIDE



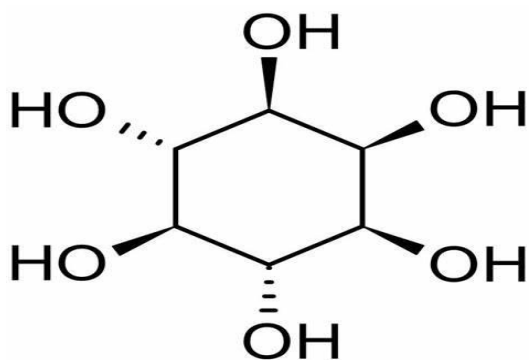
### FAD



## NAD



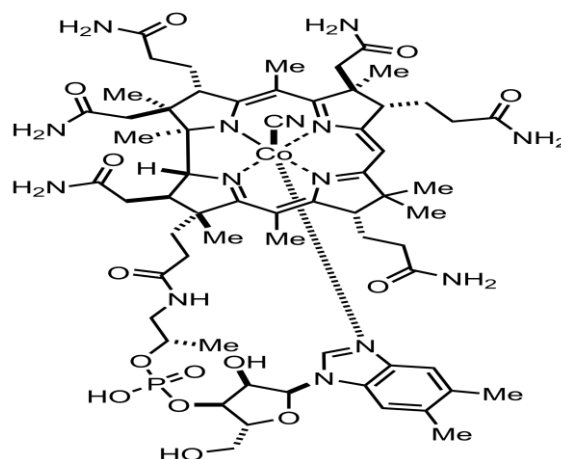
## INOSITOL



The Inositol is a carbohydrate when it phosphorylated enter in the formation of phosphatidylinositol transfer protein alpha which present in beta cells of islets of Langerhans which is important for insulin secretion, so the inositol compound is an

important need for diabetic patients.

## CYANOCOBALAMIN



Cyanocobalamin it is an important for formation of hemoglobin which is carry the oxygen and transfer it to the cell of organs (the important needs of all cells are glucose and oxygen), the deficiency of cyanocobalamin lead to pernicious anemia as well as the cyanocobalamin is important for protection of nerves especially peripheral nerves.

The high blood glucose level cause peripheral neuritis, neuropathy and lastly loss of sensation.

In the third world the poor patients in low hygiene may be invade with screw without sensation and continue to several days without sensation, cause gangrene or at least foot injury of diabetic.

## 3. Conclusion

The diabetic patients need glucose, inositol, riboflavin, nicotinamide and cyanocobalamin to keep the blood glucose level at normal level or near of that in addition to oral hypoglycemic in

type-2 diabetic or insulin in type-1 diabetic.

N.B. the physicians must be taken in consideration the importance of glucose and vitamin B complex are taken by diabetic patients.

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