

# Covid-19 and Diabetes: Mini-review

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## Abstract

A novel coronavirus is a specific virus that causes disease for human and animal. Humans sick with the virus for 3-7, in some people it may take 14 days before developing symptoms. The common symptoms of COVID-19 were fever, tiredness, and dry cough. Most people (about 80%) recover from the disease needing a special treatment. The virus can be dangerous and even mortal. Older people, and people with other medical conditions (such as asthma, diabetes, or heart disease), maybe more defenceless to becoming severely ill.

**Keyword:** Covid-19; Diabetes; Insulin; Single-gene mutations

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## Context

In the year of 2019, a Pandemic Coronavirus was identified as the cause of pneumonia cases in Wuhan, a city in the Hubei Province of China. It quickly expanded consequently, rising in pandemic completely China, with swift spread globally, hitting now almost every continent. Understanding of this novel coronavirus is still unfolding.

## Types of Diabetes

### Prediabetes

When your blood sugar is higher than it should be but not high adequate for your physician to diagnose diabetes is described as Prediabetes [1]. Prediabetes leads to type 2 diabetes and heart disease [1].

A group of metabolic disorders distinguished by a high blood sugar level over a lengthy duration of time is called Diabetes Mellitus (DM). Signs often involve frequent urination, increased thirst, and hunger. Untreated diabetes may cause several difficulties. Serious complications can incorporate diabetic ketoacidosis, hyperosmolar hyperglycaemic state, or death. Serious long-term complications include cardiovascular illness, stroke, chronic kidney disease, foot ulcers, damage to the nerves, damage to the eyes and cognitive impairment.

Diabetes is expected to both the pancreas not creating sufficient insulin or the cells of the body not reacting accurately to the insulin delivered.

### Type 1 Diabetes

Insulin-dependent diabetes (Type1 Diabetes) is used to be called juvenile-onset diabetes, because it often begins in childhood [2]. This is an autoimmune condition. When our body attacks the pancreas with

antibodies. The pancreas got damaged and doesn't make insulin. The genes might cause this type of diabetes. Sometimes it happens due to problems with cells in your pancreas that make insulin.

A maximum of the health obstacles that can come with type 1 happens because of injury to tiny blood vessels in your eyes called (diabetic retinopathy), nerves (diabetic neuropathy), and kidneys (diabetic nephropathy). Type 1 Diabetes have a higher risk of heart disease and stroke.

### Type 2 Diabetes

Non-insulin-dependent (Type 2 diabetes) used to be called adult-onset diabetes [3]. Nowadays it becomes more natural in children and teens over the past 2 decades, mostly because more young people are overweight or obese. 90% of people with diabetes have type 2 diabetes. In type 2 diabetes patients, the pancreas usually creates some insulin. That amount of insulin is not enough or your body doesn't use it as it should. Insulin resistance, when the cells don't react to insulin, usually happens in fat, liver, and muscle cells.

Type 2 diabetes is milder when compared with type 1. Type 2 diabetes causes major health complications, especially in the tiny blood vessels in your kidneys, nerves, and eyes. The risk of heart disease and stroke may be increased. More than 20% over the target bodyweight of their height. Have an especially high risk of type 2 diabetes and health problems. Obesity often induces insulin resistance, so your pancreas has to fight harder to obtain more extra insulin. But it's still not quite to keep your blood sugar levels.

### Gestational diabetes

A situation in which a woman without diabetes increases high blood sugar levels while pregnant. Gestational diabetes generally occurs in a few symptoms. Though, it does raise the risk of pre-



eclampsia, depression, and needing a Caesarean section. Children born to mothers with inadequately treated gestational diabetes are at enhanced risk of being too large, having low blood sugar after birth, and jaundice. If untreated, it can also appear in stillbirth. Long term, babies are at higher risk of being overweight and growing type 2 diabetes. It is caused by not enough insulin in the setting of insulin resistance. Risk factors combine being overweight, before possessing gestational diabetes, a family history of type 2 diabetes, and having the polycystic ovarian syndrome. Diagnosis is by blood tests. At normal risk, screening is suggested within 24 and 28 weeks of pregnancy. Who are at high risk, testing needs at the first prenatal visit [4].

A rare autosomal dominant inherited form of diabetes is called Maturity onset diabetes of the young (MODY), Single-gene mutations lead to defects in insulin production. It is significantly less prevalent than the three main types.

### Symptoms

Affected People with COVID-19 may have fever, cough, shortness of breath (trouble breathing), feel tired and have muscle aches. The breathing problem is severe when the infection affects the lungs and causes pneumonia [5].

### Prevention for avoid Covid-19

Keep hydrated, Monitor your blood glucose, Monitor your temperature, and monitor ketone bodies when you are on insulin [5].

- Avoid contact with your face, eyes, nose, or mouth when your hands are stained.
- Don't move away when you're sensing sick or have a cold or flu indications.
- Maintain at least 3 feet (1 meter) distance from who is coughing or sneezing.
- Close your face with the inside of
- Your elbow whenever you sneeze or cough.

- Cover your mouth with the inside of your elbow whenever you sneeze or cough.
- Throw away any tissues you use right away.
- Clean objects you use a lot. Clean with disinfectant objects like phones, computers, utensils, dishware, and doorknobs.

### Treatment

Syringes, Insulin pens that utilize prefilled cartridges including a tiny syringe, Jet injectors that use forceful air to impart a spray of insulin through your skin, Pumps that carry insulin over a tube to a catheter beneath the skin of your stomach.

Type 2 diabetes treatment involves keeps a healthy weight, eating healthy food, and exercising. Fascinating people need medication [5].

Viral medicines, breathing support, such as mechanical ventilation, Steroids to reduce lung swelling, Blood plasma transfusions.

For treating Diabetes patients who are affected by Covid-19, they can use Hydroxychloroquine and Chloroquine [6]. Not clearly known, changes the pH of endosomes and believed to prevent viral entry, transport and post-entry events. Inhibits infection of cells by SARS-CoV-2 in vitro, approved for malaria treatment and prophylaxis.

### References

1. Tuso P (2014) Prediabetes and Lifestyle Modification: Time to Prevent a Preventable Disease. *Perm J* 18: 88-93. <https://doi.org/10.7812/tpp/14-002>
2. Atkinson M, Eisenbarth GS, Michels AW (2014) Type 1 diabetes. *Lancet* 383: 69-82. [https://doi.org/10.1016/s0140-6736\(13\)60591-7](https://doi.org/10.1016/s0140-6736(13)60591-7)
3. Types of Diabetes Mellitus. WebMD.
4. Gestational Diabetes.
5. Tim Jewell (2020) Everything You Should Know About the 2019 Coronavirus and COVID-19.
6. Singh AK, Singh A, Shaikh A, Singh R, Misra A (2020) Chloroquine and hydroxychloroquine in the treatment of COVID-19 with or without diabetes: A systematic search and a narrative review with a special reference to India and other developing countries.