



جامعة الإمام عبد الرحمن بن فيصل
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What are Ketones?



What are ketones?

Ketones are substances produced by your body when burning the stored fats to produce energy .When your body burn a lot of fats rapidly, the level of ketones in the blood becomes high making blood much acidic and affects the chemical balance of the body .This can lead to complications affect your health.

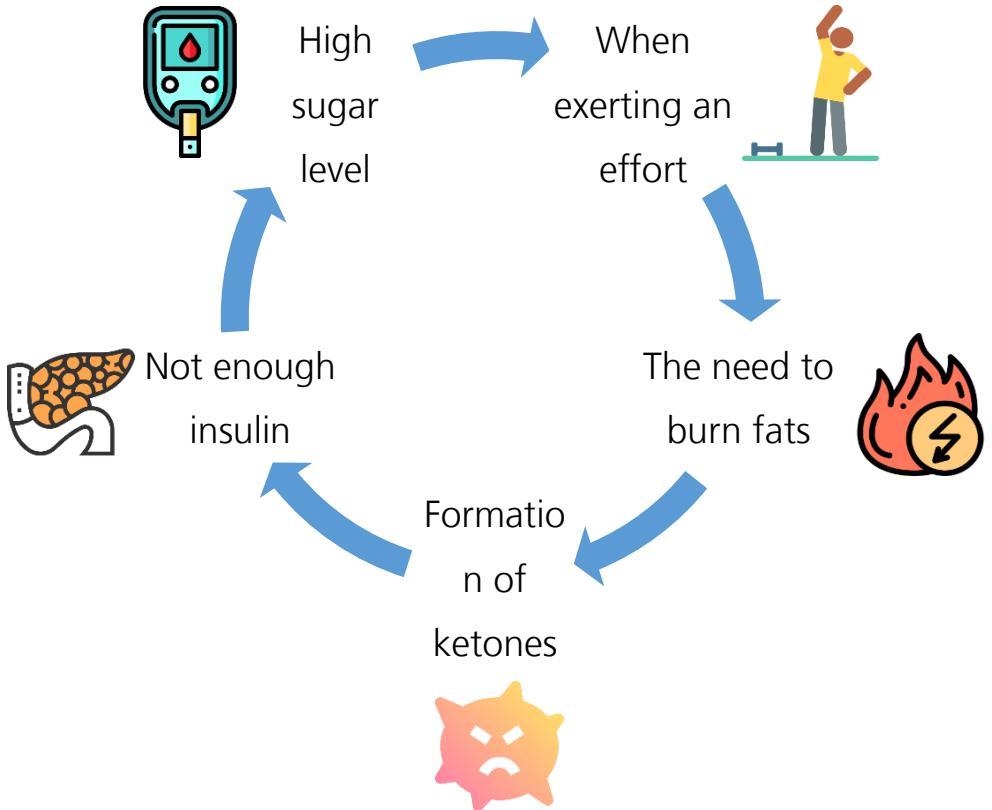


How does that happen?

In normal cases, insulin performs its role by inserting sugar in the cells for producing energy and vital functions. When there is no insulin, the body burns the fats producing toxic substances (Ketones). This happens specially to type 1 diabetes at the age of adolescence and other rare cases such as famine in poor countries.



How are keto acids formed?



What are the reasons?

The main reason is your failure to take insulin treatment, but its incidence increases with agitation, infections, or some severe diseases such as (influenza - fever - intestinal flu - menstruation).

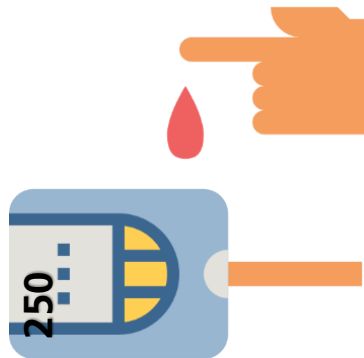
It may be due to one or more of the following reasons:



What are the reasons?

1. High glucose level:

A high glucose level means more glucose and less insulin in blood. your body needs insulin to use glucose for energy production. When there is no enough insulin, your body starts burning fats instead of glucose to produce energy.



What are the reasons?

2. Exercise:

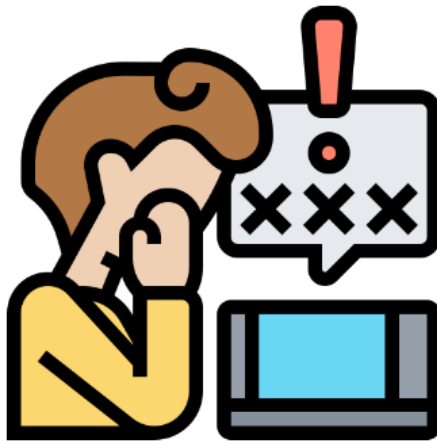
When you practice any physical activity, your body needs energy .In case of non-enough insulin or glucose, the body burns a lot of fats.



What are the reasons?

3. Pressure:

In exposure to pressure types such as :(surgery or during the exams) .The body needs energy to resist these pressures. This energy may result from fats burning when there is not enough glucose.



What are the reasons?

4. Disease:

The body needs more energy to combat diseases . In this case it obtains energy by burning more fats.



What are the reasons?

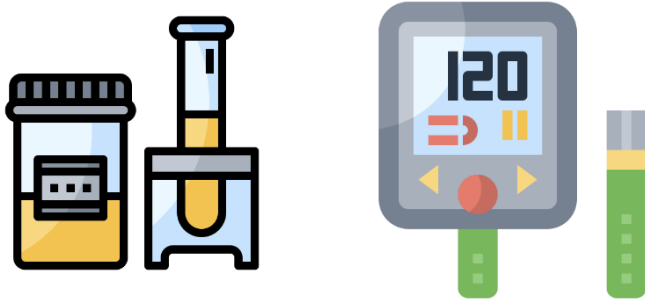
5. Pregnancy:

In pregnancy body needs energy enough for two persons. If you do not take enough food the body burns the fats to obtain enough energy.



How are ketones detected?

You can use [strips](#) by dipping them in urine and comparing the resulting color to the color on the meter used, or by some types of new glucose meters.



What are the symptoms of ketones high level?

Symptoms vary according to the period and ration of high blood sugar, time of neglecting taking insulin, carbohydrate ratio, protein, and exerted energy.

Symptoms include:

1. Dry mouth or extreme thirst.



2. Mouth odor resembles acetone.



3. Anorexia



4. Stomach pain



5. Nausea or vomiting



6. Dryness and skin burning



What are the symptoms of ketones high level?

7. Fatigue and dizziness



8. Frequent urination



9. Difficulty in breathing.



Notice:

Symptoms may change into coma, and if **not treated** it may cause death.

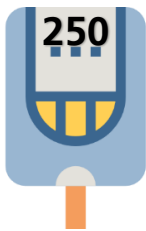


When to test ketones?

- You need to do checks when develop signs of high ketones, or feel sick ,pregnant or any of the reasons mentioned above.



- Or when the blood sugar level is above 250 mg / dl especially in the case of sport exercise.

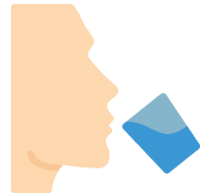


How to treat Ketones?

Your treatment depends on the [level of ketones](#) in urine .And the quantity is determined as follows:

1. If your blood sugar is 250-300 mg/ dL and no ketones:

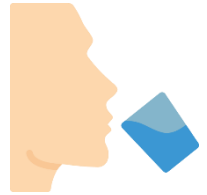
- Drink some water
- Walk a little effortlessly
- Repeat the test. If the rate falls below 250 mg / dl, then no risk.



How to treat Ketones?

2. If ketones levels are low and the blood sugar was higher than 300 mg/ dL:

- Drink some water
- Take one corrective dose of insulin
- Then repeat the test after an hour. If it does not decrease, go to the emergency room.



How to treat Ketones?

3. If your ketones are moderate or high:

When the ketones keep the same level after taking suitable medicines, refer directly to the doctor without delay for it may increase and expose you to risk.



Notice:

Do not do any exercise when blood glucose is below 250 mg/ dL.



Sources and References:

American Diabetes Association, ADA

Review and Audit:

The content of this booklet is reviewed by
Diabetes Unit Consultants at King Fahd University
Hospital.

Health Awareness Unit

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