Ketonix Manual 2016 v1.1

KETONIX INSTRUCTIONAL MANUAL

Contents

1. UNPACK AND POWER YOUR KETONIX

In your box you will find:

- The KETONIX
- An extra mouthpiece
- Storage Bag
- Brief instruction manual and warranty details.

When you first receive your KETONIX the sensor needs to be powered overnight. We recommend to power it for at least 12 hours. The KETONIX BATTERY (Sold Separately) needs to be charged for until full. This may take an extended period the first time.

TIP 1: If you do not use your KETONIX for an extended period we recommend that you power it for at least 12 hours.

TIP 2: Check that the airway outlet on the mouthpiece is clear and unobstructed. The airway outlet on the mouthpiece and KETONIX should align. When changing or cleaning a mouthpiece before you reattach it you should apply a small layer of vaseline to the inside of the mouthpiece and ensure the airway outlet on the mouthpiece and KETONIX align.

TIP 3: To extend the life of the device don't have any cosmetics on (EG: Lipstick), don't smoke prior and rinse your mouth before carrying out a measurement. Fine particles may damage the sensor.

STORAGE: Store the KETONIX in the pouch provided to protect the sensor from dust and dirt. Store the cable rolled up as delivered.

2. DOWNLOAD THE SOFTWARE

The KETONIX software needs to be downloaded from www.ketonix.com

Minimum Requirements: The latest version of Java, OS Maverick and above (for Mac) and Windows 7 and above (for PC).

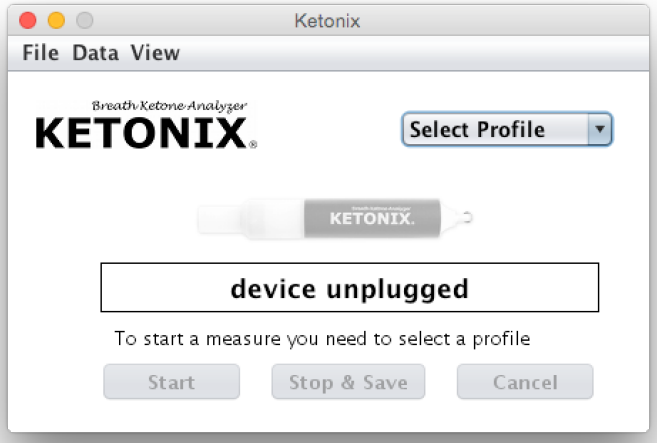
2.1. Downloading for MAC

1. Ensure you have the latest version of Java.
2. Go to the website and log in. (**Tip:** Tick remember me to store your username and password).
3. Go to **MY MENU** in the task bar and select **Downloads**.
4. Select the software for MAC.
5. Tick that you agree to the terms and conditions.
6. Select Download
7. Find the downloaded software and double click on it.
8. Install the software(Select Save File)
9. Follow the installation guide.
10. Find the installed KETONIX software in your programs. Double click to open.

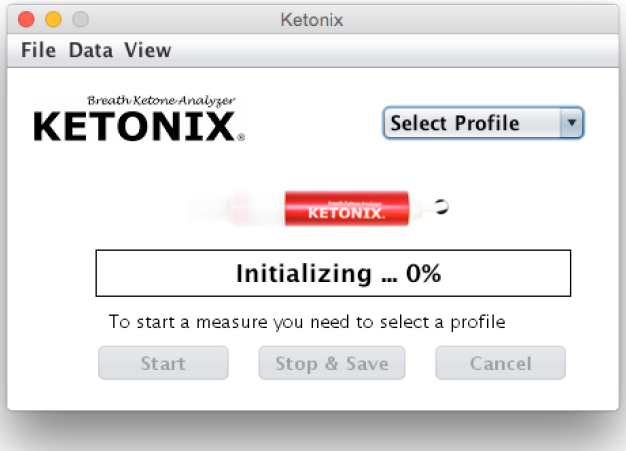
2.2. Downloading for PC (Windows)

1. Ensure you have the latest version of Java
2. Go to the website and log in. (**Tip:** Tick remember me to store your username and password).
3. Go to **MY MENU** in the task bar and select **Downloads**.
4. Select the software for PC (Windows).
5. Tick that you agree to the terms and conditions.
6. Select Download and install to your desktop.

Open the software and it will show you the KETONIX is not connected to the computer (device unplugged).



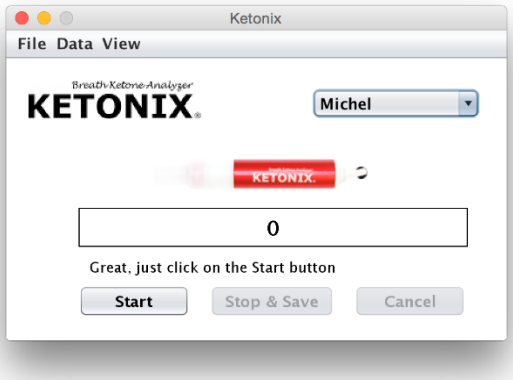
Connect the KETONIX to you computer. The software will note which KETONIX you have (BLUE or RED). Below a KETONIX RED is connected. The software will commence **Initializing.**



TIP 4: When the KETONIX is Initializing the sensor is warming up. You cannot take a measurement until the KETONIX has completed Initializing.

Be patient whilst the software is Initializing. This may take a number of minutes and gets shorter with more frequent use.

Once Initializing is complete you will be prompted-
Great, just click the Start button.



Before you use the KETONIX for the first time it needs to be **CALIBRATED**.

3. CALIBRATE THE KETONIX

Before you use the KETONIX for the first time it needs to be calibrated to your local environment.

TIP 5: If your KETONIX has not been used for a while, you are travelling or the environment you are in has changed you should calibrate the device again.

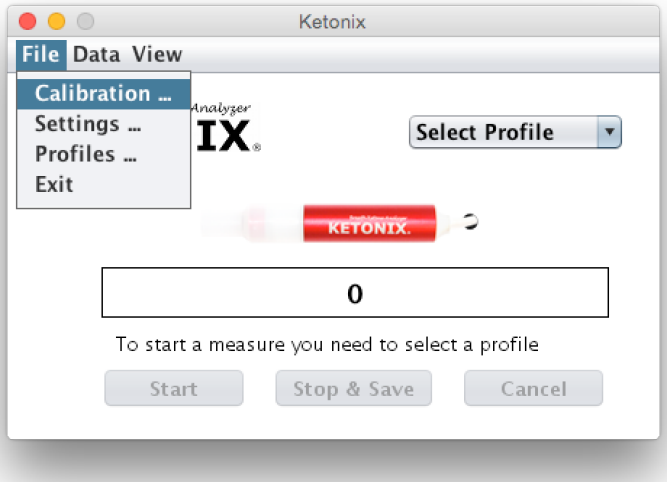
YOU DO NOT NEED TO CALIBRATE THE KETONIX FOR EACH USE

TIP 6: When carrying out a calibration close all other software and applications so the calibration process will not be interupted.

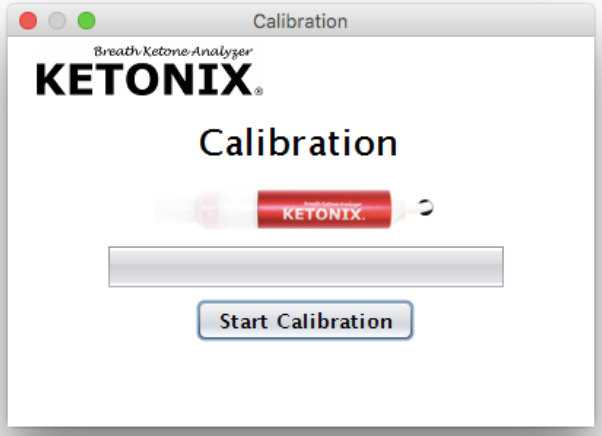
To calibrate carry out the following:

1. Power it up overnight (longer the better)
2. Unplug the KETONIX and wait 10 minutes (Let the device cool down)

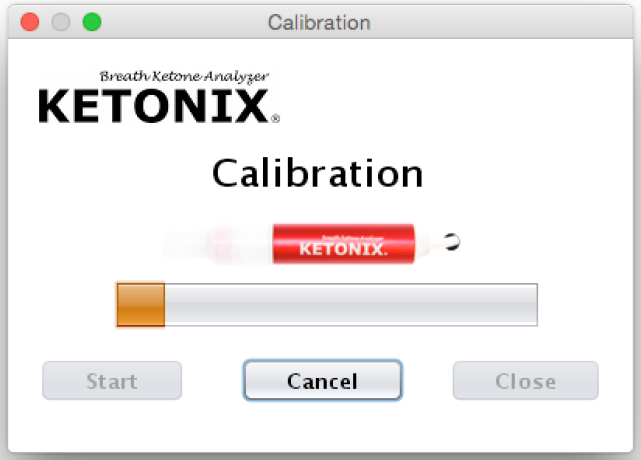
3. Open the software
4. Plug in the KETONIX
5. Wait until the **Initializing** message disappears and you have a steady Blue LED.
6. Select **File**, then **Calibration**



7. Select **Start**



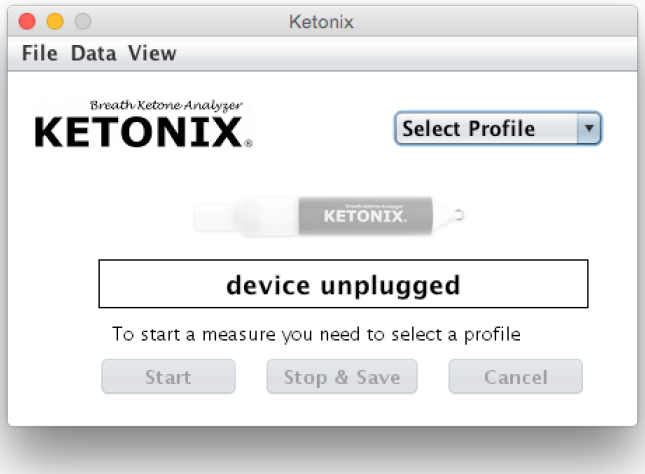
8. The Ketonix will then start calibrating.



TIP 7: It is important to let the KETONIX perform the Calibration to the end.

Let the Calibration window close down on its own.

9. Once the calibration has been completed the software will tell you that the device is unplugged.
10. Unplug and plug back in the KETONIX.



4. CREATE A PROFILE

Before taking a measurement, you need to set up a Profile to save data. You will need at least one profile.

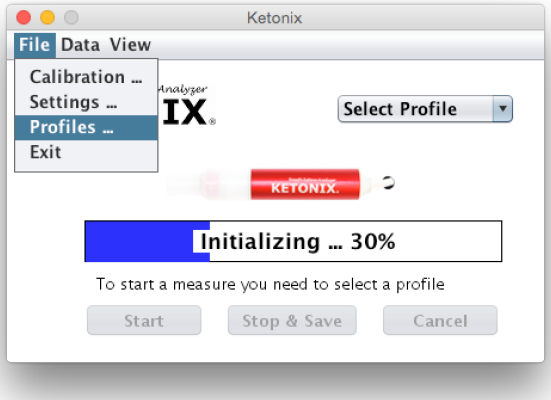
If more than one person is going to use the KETONIX you will need to create multiple profiles.

You can store data on a local file and/or on the Cloud(ketonix.com).

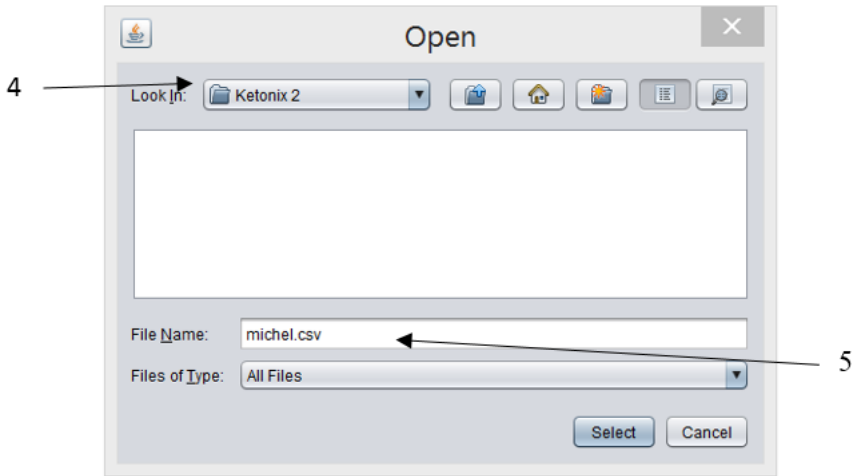
Note: When creating additional profiles to your computer you will need to create a new username and password on the website (ketonix.com) for each additional profile. If you are saving the data locally you will need to create a new DATA FILE(.csv) and link it to the new Profile.

To create a profile carry out the following:

Select **File** and then **Profiles** from the drop down menu.



1. Select the **+** symbol in the bottom left corner.
2. Enter a **Profile Name** in the top right hand corner.
3. Select **browse**
4. Select a folder to save the data file on your computer.
5. Create a file name with the extension name .csv (Eg: michel.csv)



6. Tick or leave blank if you agree to let you data be anonymously used. **(We encourage you to do so. This will help us and you learn more about breath testing ketones. This data will not be traceable back to you from any analysis done).**

7. Enter your **Username** and **Password** if you are going to store your data on the **Cloud (Ketonix.com)** online **(Optional).**

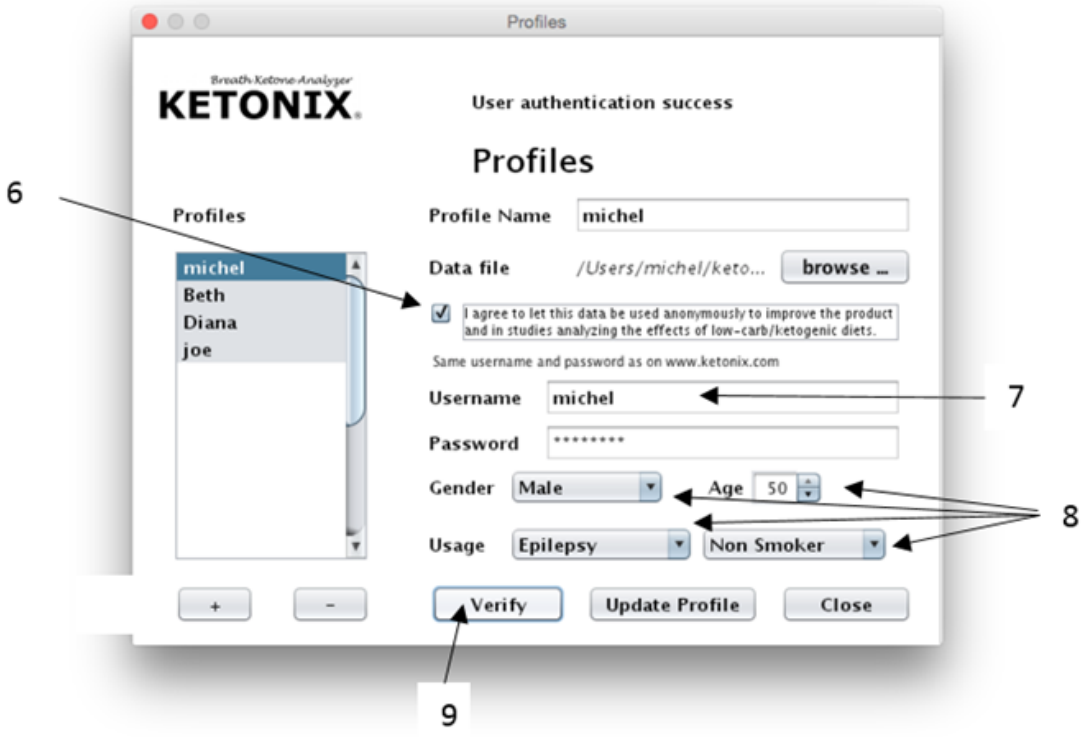
8. Fill out the the drop down options for **Gender, Age, Usage and Smoking** (This again is Optional).

9. Select **Verify Profile.**

10. You should receive a Authentication Success message.

11. Select Save Profile.

12. Your new profile should appear in the **Profiles Box**. Select **Close** in the bottom right hand corner.



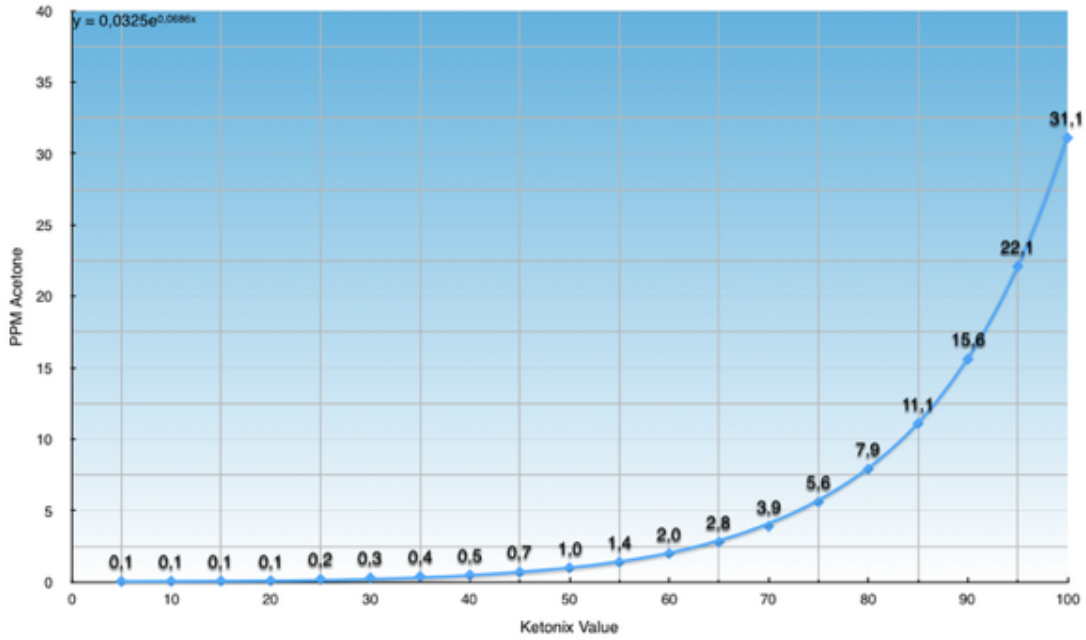
You are now ready to take a measurement.

5. The KETONIX Value

The KETONIX Value is a sensor relative value and is a percentage. Our template Nutritional Ketosis range is 40 to 70. This is approximately 0.5 - 3.9 ppm of Breath Acetone.

The measurements you get using the KETONIX are individual and personal. It gives you a trend of your results.

By measuring often and observing what and how lifestyle affects your level of ketosis you learn what food, fasting and activity works for you.



6. TAKING A MEASUREMENT

6.1. Correct Technique and Practice

To get consistent measurements it is very important to follow the same procedure each time.

You want the contents of your lungs to be exposed to the KETONIX, not the air just halfway down your lungs.

- Do not make a deep inhale before the exhale.
- Breath normally as if you are relaxed (Eg: Reading a book)
- After exhaling and before inhaling, empty the remaining part of the air in your lungs into the device.
- The exhale should be at least 15 seconds and it should contain the last air in your lungs (there is no more air possible to exhale).

The ability to get the last air out of the lungs (which has the highest concentration) is different for everybody. There is no point in comparing two people's readings. The reading is personal and should be used as an indicator of how lifestyle affects the ketosis.

TIP 8: It is a common failure to make an inhale just to exhale. This will dilute the concentration and be more inaccurate.

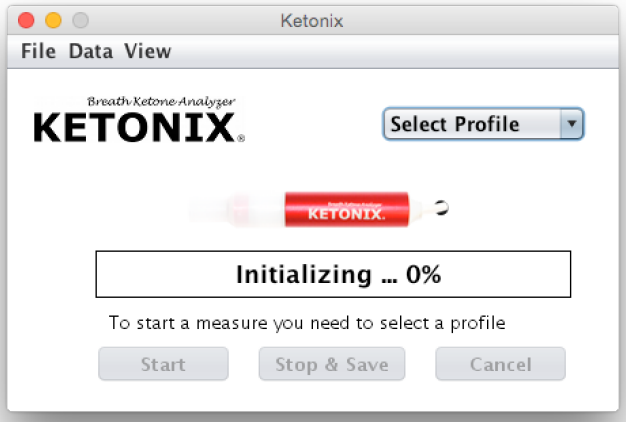
TIP 9: Blowing into the device to hard may cool down the sensor and give you a false positive.

PRACTICE: To confirm that you have good technique you can take a measurement 5 times in 20 minutes. If you have good technique your results should only have a small variance of 1 to 2 values.

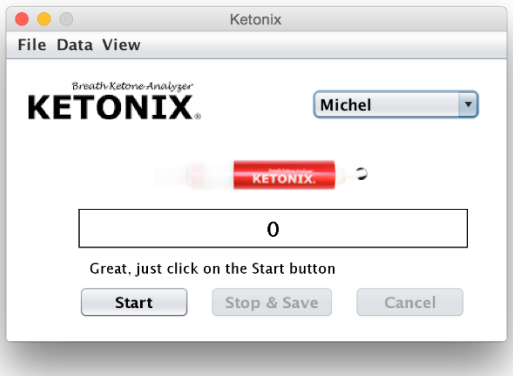
6.2. Taking a Measurement with the Software

To take a measurement carry out the following:

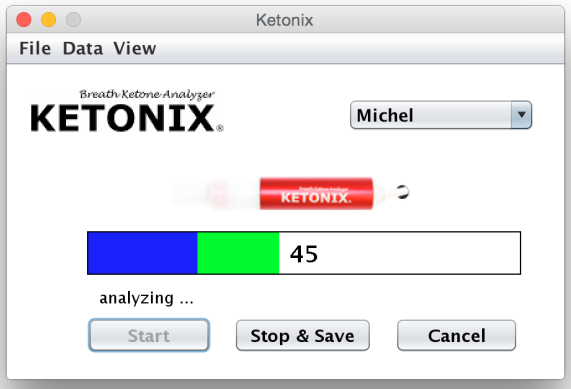
1. Open the KETONIX software
2. Plug in the KETONIX (Note: if you have just calibrated the KETONIX unplug it and plug it back in).
3. Select your Profile
4. Wait for the Initialization to complete (Steady Blue LED) on the KETONIX.



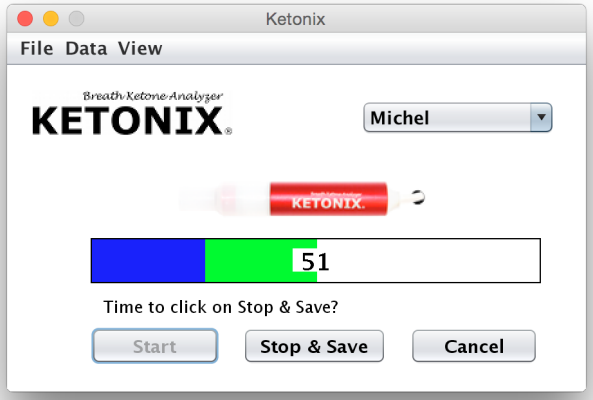
5. Press **Start**. The LEDs will commence flashing a disco pattern. Once the LED is back to a steady Blue you can start exhaling into the mouth piece.



6. Once you have finished blowing into the mouth piece the software will start to analyze the sample.



7. The value should increase until it reaches its highest concentration where the software will prompt you to **Stop and Save** the result.
8. Wait a moment then select **Stop and Save**.



Your values are then saved to your data file (if you have set one) and/or the Cloud.

TIP 10: Leave the KETONIX plugged in for approximately 2 minutes after the test to dry out the sensor.

6.3. Taking a Measurement without the Software

1. Plug the KETONIX into the USB port and wait until the blue led is steady (not blinking).
2. Take a breath into the mouthpiece.
3. Wait 30 secs and the colored LED will indicate what level of Ketosis has been measured.

TIP 11: See **SETTINGS – 6.1 Interpreting the Visual Spectrum** to understand the Feedback from the colored LEDS.

6. SETTINGS

6.1. Interpreting the Visual Spectrum

When you take a measurement with the KETONIX your results are indicated via a Visual Spectrum from the device which gives you feedback on what level of Ketosis you are in.

The highest value of your measurement is displayed using the colored LEDS inside the KETONIX. The four different LED's indicate the different value ranges you have set your KETONIX to. BLUE being the lowest and will show no or very small traces of Ketones.

TIP 12: The colored LED will blink/flash between 1 to 10 times. This will tell you where your measurement is within the color range with 10 blinks being the higher range.

6.2. Preconfigured Settings

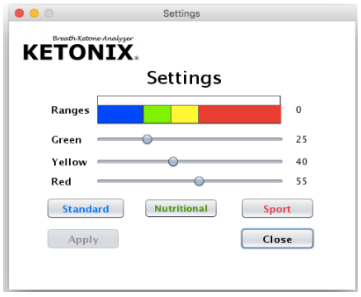
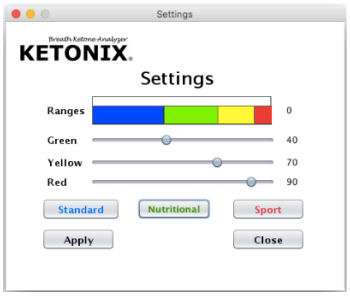
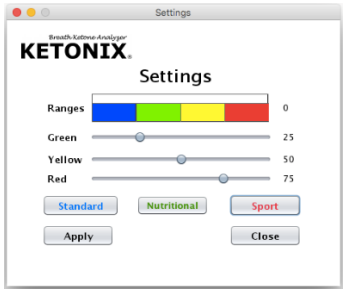
The KETONIX has three preconfigured settings **Standard, Nutritional and Sport.** Each of these settings indicates different values for each color. The individual user can therefore have even more specific feedback.

A guide to using the appropriate setting for you is:

Standard:	First time starting out on a low carb/ketogenic diet.
Nutritional:	You have been on a low carb/ketogenic diet and are into this for health.
Sport:	Active and competitive striving to get your level of ketosis as high as possible.

The different values in each setting are noted in the below table and the settings page of the software.

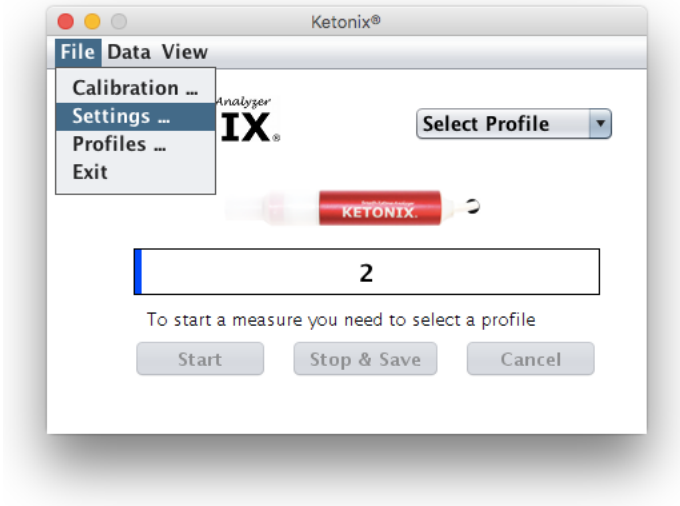
Color	Standard	Nutritional	Sport
Green	25	40	25
Yellow	40	70	50
Red	55	90	75

Standard	Nutritional	Sport
		

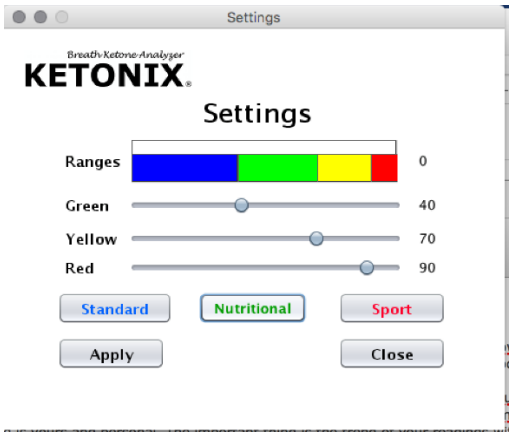
6.3. Adjusting the Preconfigured Settings (Standard, Nutritional and Sport)

To change a setting carry out the following:

1. Click on **File** and select **Settings** from the drop down menu.



2. Select the required setting Standard, Nutritional or Sport (The values should change for each setting).
3. Select **Apply** and then **Close**.
4. Your settings have been changed.



6.4. Adjusting the Settings Individually

If you require more personalized settings it is possible to adjust the settings individually in your KETONIX to provide more meaningful feedback.

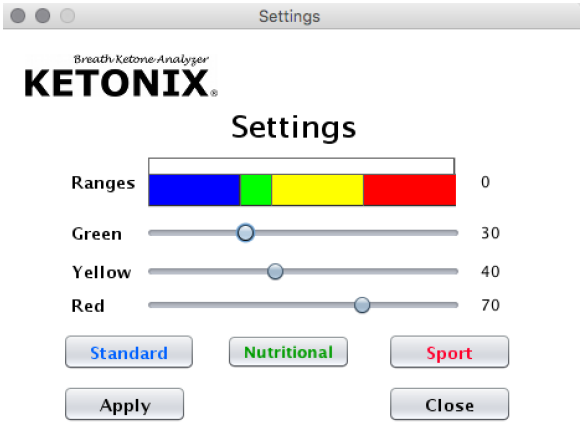
To adjust your settings carry out the following:

1. Go to the **Settings** Page as previously described.
2. Drag the knobs for **Green, Yellow** and **Red** to your desired ranges.
3. When you have designed your feedback ranges, just hit **Apply** and it is saved to your KETONIX.

Below is an example of how you can alter the settings.

This example uses the Yellow range as the nutritional ketosis feedback.

1. Set the Green knob at 30
2. Set the Yellow knob at 40
3. Set the Red knob at 70
4. Then click Apply and it is saved to your device.



6.5. How to find your personal Nutritional Ketosis Range.

To personalize your KETONIX requires carrying out a water fast. You can carry out a water fast for one day to find out your low edge value (When you are in Ketosis).

If you need to find your upper edge you can water fast for an additional three days.

Before you perform this a water fast you must get clearance from your doctor.

If you do not want to fast or your doctor advises against water fasting you should use the **Nutritional** preconfigured setting in the software.

Carry out the below process:

1. Low Edge: Water fast for 24 hours and then take a measurement.

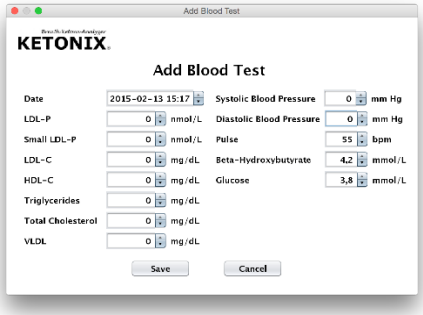
   This value is your Low Edge (Generally around 40).

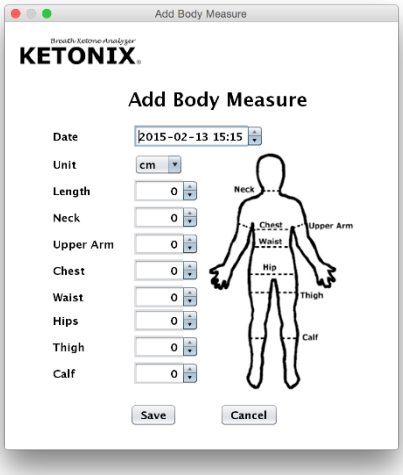
2. Upper Edge: Water fast for an additional 72 hours and then take a measurement.
   This value is your Upper Edge (Generally around 70).

TIP 13: Fasting may have your level of ketosis elevated for a number of days after the fast is ended. You should continue a LCHF/Ketogenic diet after the fasting period.

7. SAVING ADDITIONAL DATA

You can save additional data such as meals, exercise, body measures and blood values.





To save additional data carry out the following:

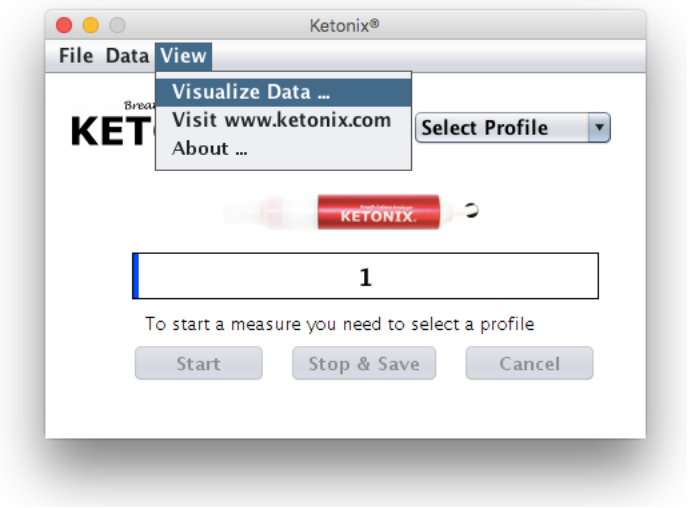
1. Open the program and select your **Profile**.
2. Select **Data** from the menu bar.
3. Enter the data into the appropriate field.

8. VISUALIZING DATA

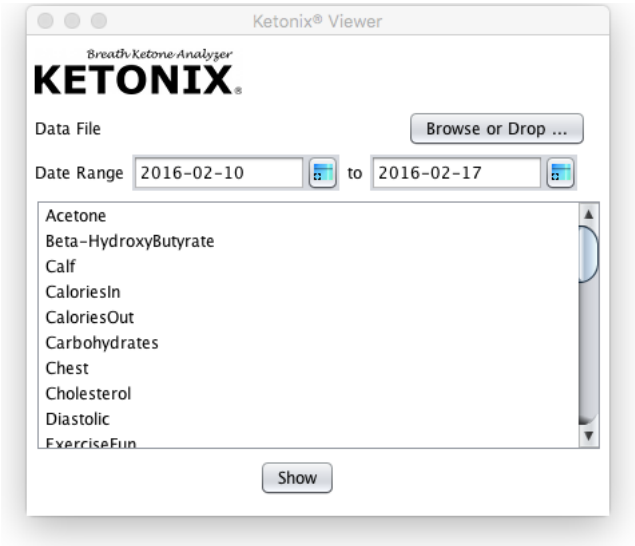
The Ketonix®Viewer software enables the user to view their data saved locally OR on the Cloud (Ketonix.com). The Ketonix®Viewer software is built into the KETONIX Software.

To use the KETONIX VIEWER you must open the KETONIX Software and carry out the following:

1. Select a **Profile**
2. Select **View**
3. From the drop down menu select **Visualize Data**.

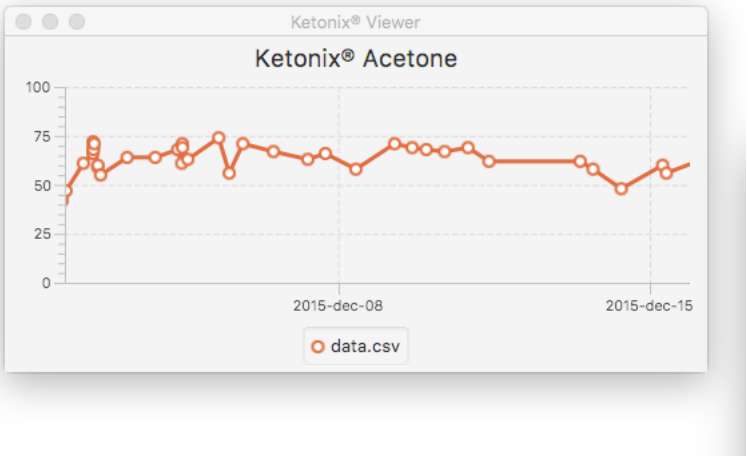


4. This will take you to the **KETONIX Viewer**.



5. You can now create a graph by selecting the **time period** and **type of data** you would like.
6. Once you have completed these two fields select **Show.**

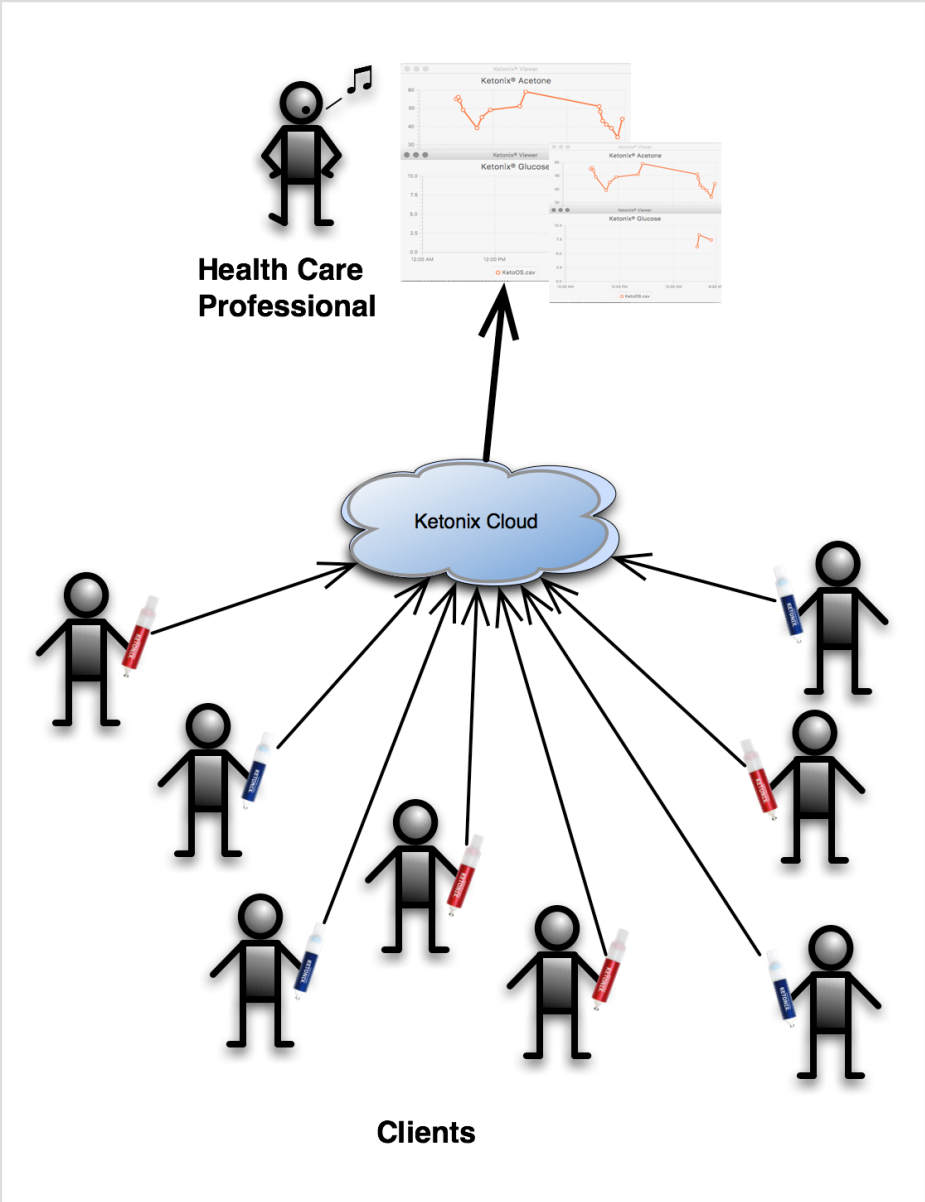
An example of a graph for Acetone is below.



9. KETONIX FOR THE MEDICAL AND HEALTHCARE PROFESSIONAL

Aiming to support medical healthcare professionals we have a simple **STUDY** function. It is **free** to use and enables practitioners to easily collect data remotely for analyse and support to their clients.

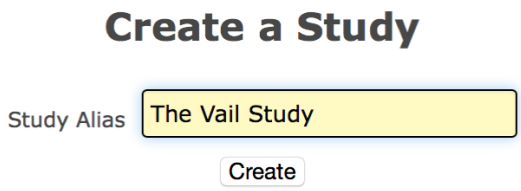
Using this functionality, client's progression can easily be monitored by the practitioner via the Internet and the cloud. I truly believe this will be a helpful tool in the therapeutic use of ketogenic diets and enable a new trend in "health coaching".



9.1. Create a Study (health care professional)

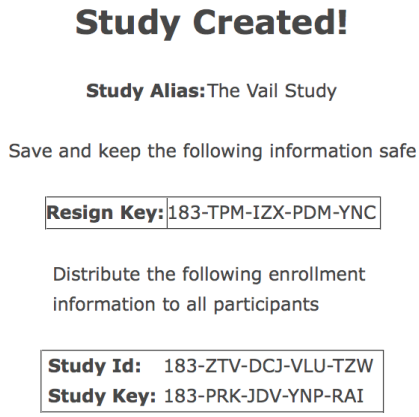
The study tool is simple to use.

1. Choose a name and select **Create.** The name could be a group name, the clinics name or whatever you want to use to group all or some or your clients.



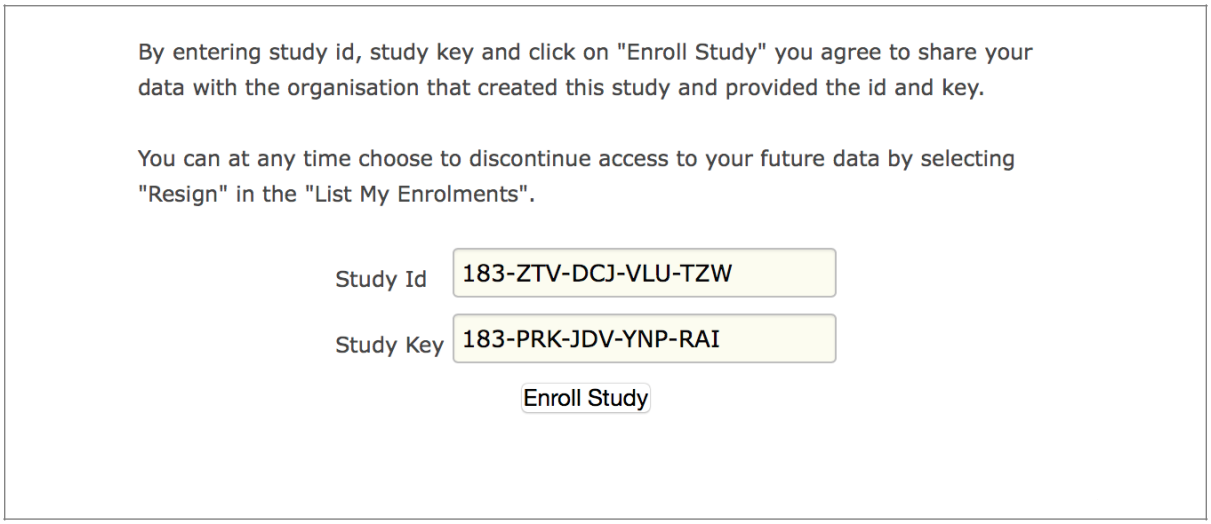
You will automatically receive a **"Study Id", "Study Key"** and a **"Resign Key".** Distribute the "Study Id" and the "Study Key" and other documents to your clients.

The **"Resign Key"** should be kept secret to have control of "drop outs".



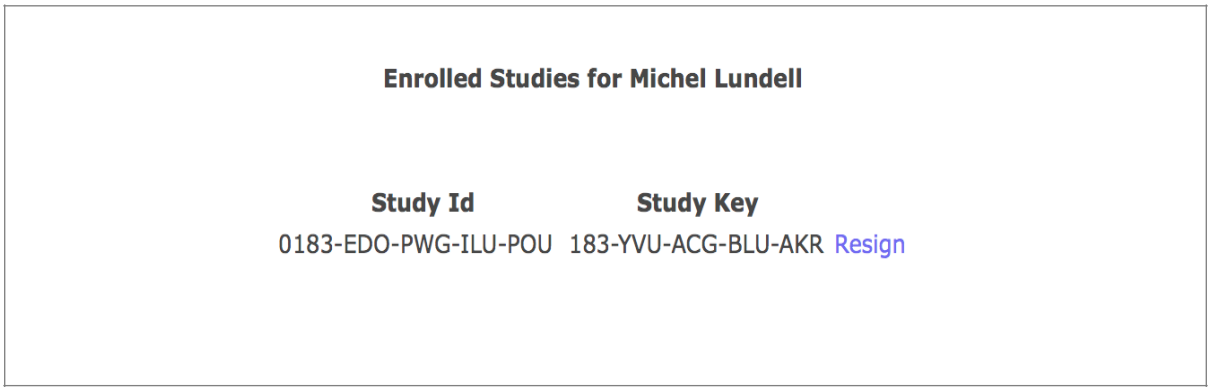
9.2. Enroll a Patient/Client in a Study (client)

To enroll a patient/client in a study follow the instructions when prompted.



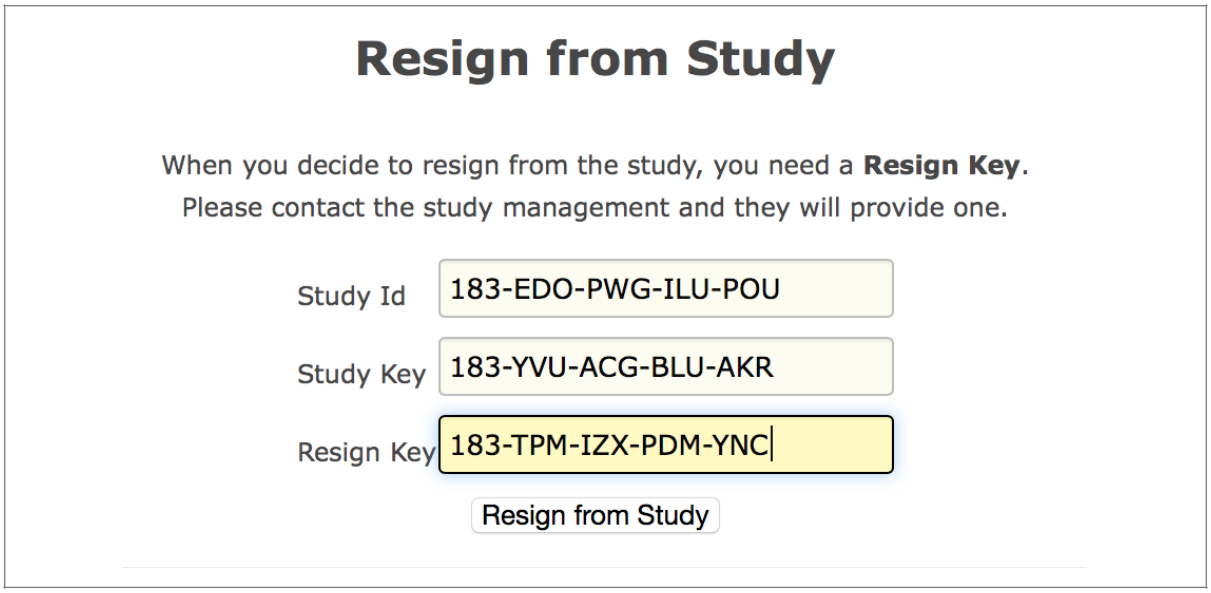
9.3. List Studies (client)

The clients have control of which study or studies they are participating in.



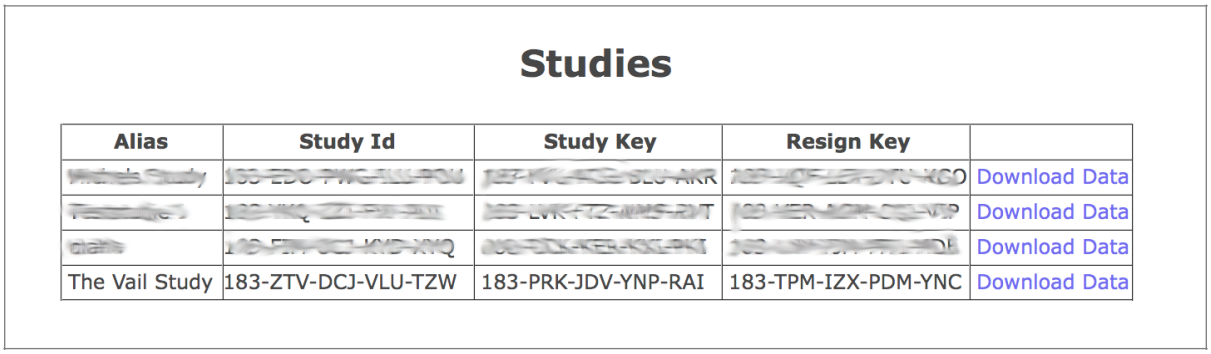
9.4. Resign from a Study (client)

The participant can resign from the study after obtaining a "**Resign Key**" from the study management.



9.5. List Studies/Download Data (health care professional)

You can then with one click download all your clients data and analyse it right there on your computer.

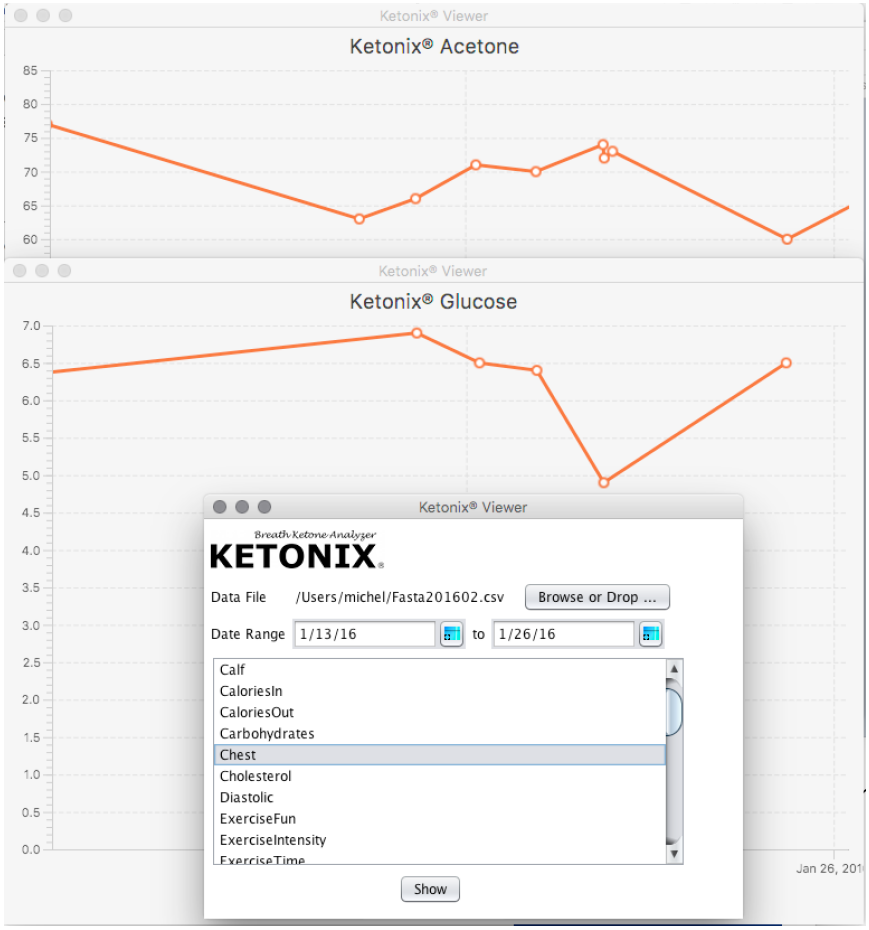


9.6. Visualize Data (health care professional)

If a medical or healthcare professional has patients using KETONIX as part of their treatment they can Visualize a patients data stored online.

You will be able to view a patient's data across a number of fields. Additionally a number of patient's data can be visualized at one time.

Select the charts and time-frame you want to view, then just drop your **clients data** into **the Data File Box** and it will be rendered.



To change from one patient to another all you have to do is drop the individual patient's data file into the Data File box.

10.GENERAL

10.1. Comparison to Blood Testing

A common misunderstanding is that breath acetone directly correlates to the blood test ketone beta-hydroxybutyrate. It is easy to make that assumption, and in some contexts it appears to correlate.

Fatty acids break down in the liver to acetoacetate. Acetone is spontaneously released from the AcetoAcetate. Excess AcetoAcetate is stored in blood as beta-hydroxybutyrate.

The concentration of Beta-hydroxybutyrate is a product of the ketosis and time.

The concentration of Acetone in breath is indicating the strength of ketosis.

The Acetone in breath correlates well to your blood glucose. So in the case of fasting, your breath Acetone will more or less be constant (high burning fat) until your glycogen stores are depleted. Then it will raise even higher to produce more AcetoAcetate.

The Beta-hydroxybutyrate does not correlate to your glucose as the breath Acetone does. Beta-hydroxybutyrate indicates the product of your ketosis strength and time.

Being in high ketosis (high breath acetone) will over time build a higher concentration of beta-hydroxybutyrate.

10.2. High Carbohydrate Testing

KETONIX is a LOW CARB TOOL. KETONIX is a technical device designed to be used by someone who is following a Ketogenic Diet (Low Carb High Fat Diet).

When you received your KETONIX, there is a tendency for customers and others to test it all the time, even if they are not following a Low Carb High Fat Diet.

It has not been designed to be used by someone eating a lot of carbohydrate rich food. If you use the device whilst eating a lot of carbohydrates it is possible to get a positive measurement on the device.

The reason for this is that eating high carb content will make the bacteria in the stomach produce methane from breaking down of the carbs. This gas will influence the reading. Simple sugars will also produce some methanol in your blood. The body does not produce many ketones whilst eating a lot of carbohydrates. Ketone production is initiated when carbs are low.

KETONIX should be used in context. Example: If you eat pizza and beer then look for ketones ... you are out of context.

10.3. Alcohol

Acetone is a byproduct of the breakdown of alcohol and can result in a positive measurement. Whilst your body is processing alcohol ketosis will be put on hold until it is gone. We recommend not to drink prior to carrying out a measurement.

10.4. Exercise

When exercising your body needs more energy. Ketones are energy and you're the level will go down during short to medium training sessions.

When doing aerobic exercise you will exhale acetone and ventilate your lungs. Wait a few minutes after exercise before testing. Test a few times after the exercise to see how your body works.

During a longer session, the buffer of ketones may become emptied and the process of breaking down fatty acids begun again to produce more ketones. As a result of a longer session the ketones can be higher than before.

10.5. Fat Adapted

If a person is fat-adapted or not, greatly affects the level of ketones you have. When starting to follow a low-carb lifestyle your ketone levels will be high due to the glucose demand from the muscles and brain. After a number of weeks the ketone levels will decrease quite a lot as the muscles become adapted to using fat as fuel.

11.SPECIFICATIONS

- Indicates your ketone production by analyzing your breath.
- Can be powered by a computer with USB port, USB charger 5V or a 5V battery with USB port.
- User calibration available with software.
- Comes preconfigured with the "Standard or Sport Range of settings" (can be changed by user software).
- User definable feedback ranges.
- Record breath ketone readings locally and/or to an online account (www.ketonix.com).
- You can anonymously contribute your data to studies of ketogenic diets(Optional).
- Mouthpiece can be easily removed and cleaned. An extra mouthpiece is included.
- Software provides profile management to enable several users to share a device using personal mouthpieces.
- A reusable instrument that can be used thousands of times.
- Weight: 55 grams.
- Size: length 150 mm, radius 12 mm.

There is two colours: Blue and Red
The difference is how they are preconfigured. The Blue is preset with “Standard” settings and the Red is preset with “Sport” settings. This can be changed using the software. It’s more a preference of color which one to choose.

If one does not have a computer, choosing a Blue will get you a “Standard” range and a Red a “Sport” range feedback.

12.TROUBLE SHOOTING

There will be a separate troubleshooting guide available on www.ketonix.com.