Sonmol SMPF-2S

Sonmol Spirometer User Manual

Model: SMPF-2S
For monitoring PEF & FEV1 in adults and children

1. Introduction

The Sonmol Spirometer is an advanced electronic device designed for personal lung function monitoring. It accurately measures Peak Expiratory Flow (PEF) and Forced Expiratory Volume in 1 second (FEV1), providing essential data for managing respiratory conditions such as asthma and COPD. This portable device features Bluetooth connectivity for seamless data synchronization with a tracking application, allowing users to monitor their lung health trends over time and share results with healthcare providers.
The device incorporates a differential-pressure-type sensor for ultra-accurate measurements, meeting the U.S. Department of Health and Human Services' Guidelines for Asthma Diagnosis and Management. It also includes a risk indicator and allows for customization of normal expected values, providing immediate feedback on lung function control conditions.

Image: Sonmol Spirometer shown alongside its ePEF tracking application on a smartphone, illustrating the device's connectivity and data display capabilities.

2. Key Features

- **Ultra-Accurate Measurement:** Equipped with a differential-pressure-type sensor, the spirometer precisely measures PEF and FEV1, adhering to established medical guidelines.
- **Smart Risk Indicator:** The large green backlit LCD screen displays test values and provides a risk indicator (red, yellow, green zones) to reflect lung function control. Personal expected values can be set for tailored feedback.
- **Bluetooth Connectivity & App Analysis:** Connects to the ePEF tracking app via Bluetooth for automatic data synchronization, allowing for comprehensive tracking, analysis, and sharing of respiratory health data with

caregivers.

- **Portable & Rechargeable:** Compact and lightweight, the device is rechargeable via USB, offering over 6 months of use on a single full charge. Ideal for on-the-go monitoring.
- **300-Record Memory:** Stores up to 300 test records with date and time stamps, enabling users to track long-term trends.
- **Dual Mouthpiece Design:** Includes two types of removable and washable mouthpieces for user comfort and hygiene.

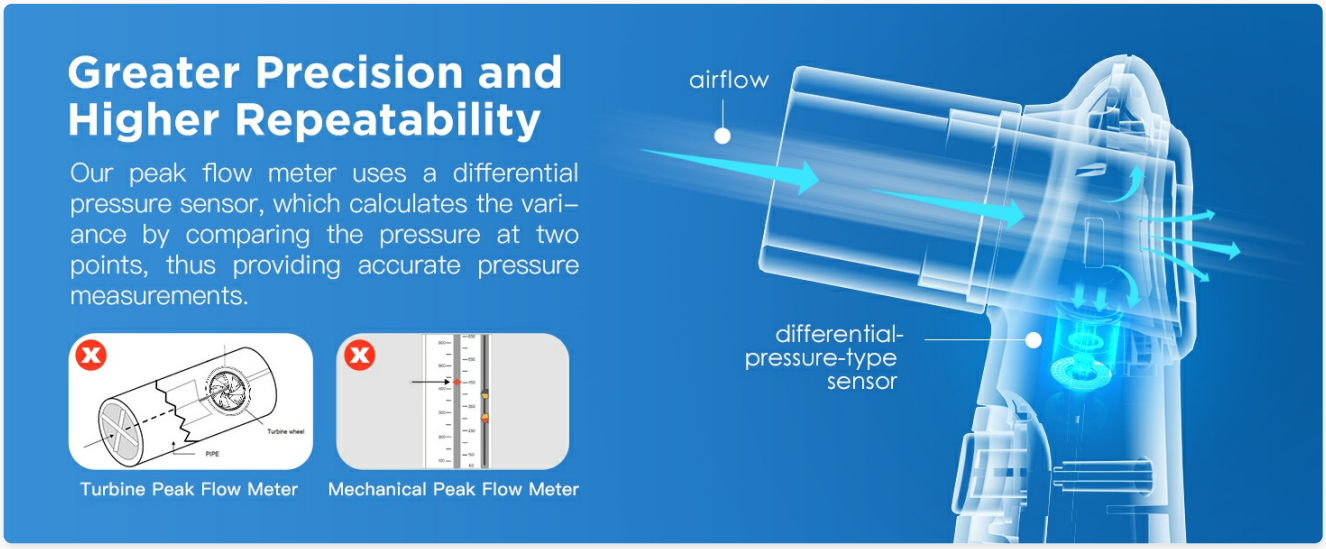

Image: An internal view of the spirometer highlighting the high-precision differential pressure sensor, which ensures accurate airflow measurement.

3. Setup Guide

3.1 Initial Charging

Before first use, fully charge the device for approximately 2 hours using the provided USB cord and a 5V adapter. The battery icon on the display will indicate charging status. When the battery icon shows 'x', it requires charging.

Image: The product packaging, which includes the USB charging cable.

3.2 App Download and Installation

The Sonmol Spirometer works with the ePEF tracking application. Search for "Asthma PEF", "Sonmol PEF", or "ePEF" in your device's app store (Google Play for Android or App Store for iOS) and download it. Alternatively, scan the QR code provided in the product documentation or on the device packaging to download the app.

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Video: Instructions on how to connect the spirometer via Bluetooth for Android devices. This video demonstrates launching the ePEF app and initiating the Bluetooth connection process.

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Video: Instructions on how to connect the spirometer via Bluetooth for iOS devices. This video guides users through the app launch and Bluetooth pairing steps specific to iOS.

3.3 Bluetooth Connection

Launch the ePEF app on your smartphone. Ensure the Peak Flow Meter is turned on. Press the device icon within the app to initiate connection. Once successfully connected, the icon in the app will turn green, and the spirometer's display will show a Bluetooth symbol (*). Data can then be automatically synced to your mobile phone.

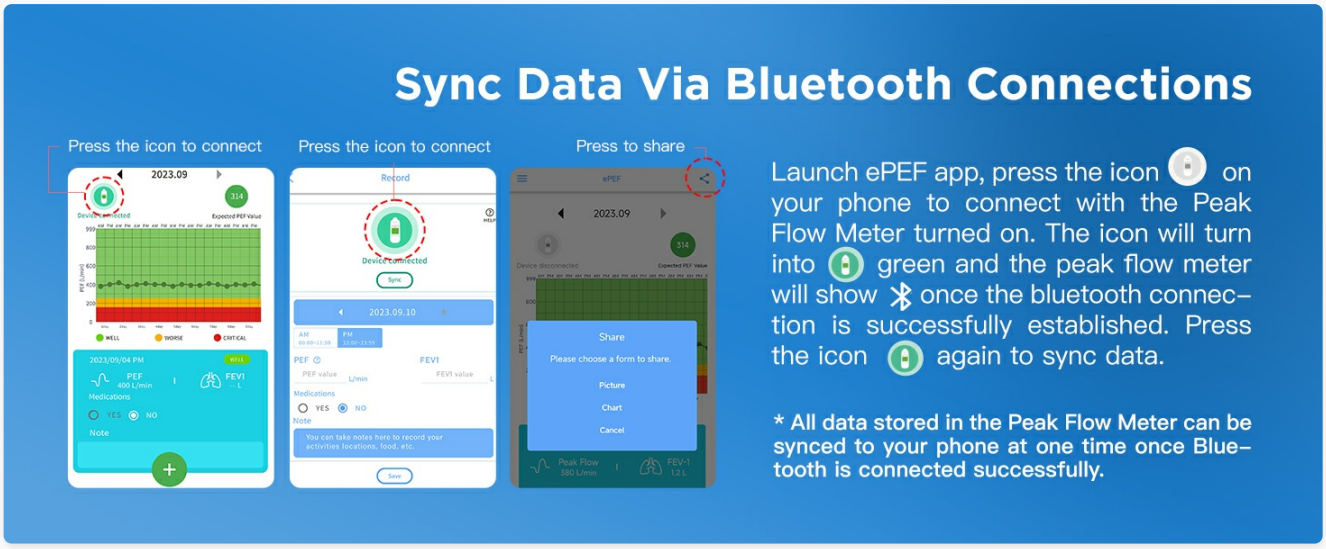

Image: A visual guide to syncing data via Bluetooth, showing the app interface and the device's display during connection.

3.4 Setting Expected PEF Value

Setting your personal expected PEF value is crucial for the risk indicator to function correctly. This can be done via auto-configuration through the ePEF app or manually on the device.

- **Auto-configuration:** The device will automatically configure based on your latest expected PEF values set in the ePEF app once connected via Bluetooth 4.0.
- **Manual Configuration:**
    1. With the device powered off, hold the Home button for 5 seconds until "000L" appears, indicating parameter setting mode. The flashing digit is editable.
    2. Press the Right button to increase the value or the Left button to decrease the value. Press the Home button to move to the next digit.
    3. Hold the Home button for 3 seconds to confirm and save your PEF value.

Image: Instructions for manually setting the expected PEF value on the spirometer's display using its buttons.

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Video: A vertical video demonstrating how to set the expected value within the ePEF App, which then syncs to the device.

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Video: A video tutorial on how to manually set the time on the spirometer device.

4. Operating Instructions

4.1 Performing a Measurement

1. Ensure the device is powered on and ready (display shows "go").
2. Inhale deeply with your mouth.
3. Cover the mouthpiece completely with your mouth, ensuring a tight seal.
4. Exhale as fast and as hard as you can into the mouthpiece.
5. Wait for two beeps from the device before reading the result.
6. Repeat the measurement at least three consecutive times, taking the highest value as the final result.

Image: A user demonstrating the correct technique for using the spirometer with one of the provided mouthpieces.

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Video: A comprehensive guide on how to properly use the peak flow meter for accurate measurements.

4.2 Interpreting Results with Risk Indicator

The device's screen will automatically display your PEF and FEV1 values. A triangular symbol will point to a color-coded zone (red, yellow, or green) to indicate your lung function control condition based on your set expected value.

- **Green Zone (PEF ≥ 80% of Expected):** Indicates good lung function management.
- **Yellow Zone (50% ≤ PEF < 80% of Expected):** Indicates caution is needed. Respiratory airways may be narrowing, and additional medication might be required.
- **Red Zone (PEF < 50% of Expected):** Indicates a medical emergency. Severe airway narrowing may be occurring, requiring immediate action and contact with a doctor or hospital.

**Note: No risk indicator will be displayed on the device without properly setting the expected value.*

Image: The spirometer's display illustrating the color-coded risk indicator zones (green, yellow, red) for easy interpretation of lung function.

Image: A visual chart explaining the meaning of the green, yellow, and red zones of the risk indicator based on PEF percentage.

4.3 Getting Your Expected PEF Value

The expected PEF value is a personal standard lung function value, typically calculated based on statistical methods considering race, gender, age, and height. Since individual physiological conditions vary, there will be differences between actual tested values and expected values. You can obtain your expected value through:

- **Calculation Formula:** Use the calculation formula provided by a specialized research institution. Scan the QR code below or visit Sonmol PEF Calculator for more information.
- **Physician Recommendation:** Your physician may provide a recommended value for you.
- **Historical Data:** Use the best of your historical PEF values from the past 2 weeks.

Image: Information on how to determine your expected PEF value, including a QR code to access an online calculator.

5. Maintenance

5.1 Cleaning the Mouthpiece

The spirometer comes with two types of removable and washable mouthpieces. To clean, simply wipe them with

alcohol. Ensure they are completely dry before reattaching to the device. Regular cleaning prevents the accumulation of contaminants.

5.2 Storage

Store the device in a clean, dry place away from direct sunlight and extreme temperatures. Keep it out of reach of children.

6. Troubleshooting

Problem	Possible Cause	Solution
Device not turning on	Low battery; Device malfunction	Charge the device for 2 hours. If problem persists, contact support.
Bluetooth not connecting	Device not on; App not open; Bluetooth off on phone; Distance too far	Ensure device is on and app is open. Check phone's Bluetooth settings. Keep device close to phone.
No risk indicator displayed	Expected PEF value not set	Set your expected PEF value in the app or manually on the device (refer to Section 3.4).
Inaccurate readings	Improper technique; Mouthpiece not sealed; Device needs cleaning	Ensure proper technique (refer to Section 4.1). Check mouthpiece seal. Clean mouthpiece.

7. Specifications

- **Measures:** PEF (Peak Expiratory Flow), FEV1 (Forced Expiratory Volume in 1 second)
- **Sensor Type:** Differential-pressure-type sensor
- **Display:** Large green backlit LCD screen
- **Connectivity:** Bluetooth 4.0
- **Memory:** 300 test records with date & time setting
- **Power:** Rechargeable battery (USB cord included)
- **Battery Life:** More than 6 months on a single full charge
- **Mouthpieces:** 2 types, removable and washable
- **Model Number:** SMPF-2S
- **Manufacturer:** Sonmol
- **Package Dimensions:** 7.4 x 2.95 x 2.44 inches
- **Item Weight:** 7.05 ounces

8. Warranty and Support

For detailed warranty information and customer support, please refer to the official user manual included in your product packaging or visit the Sonmol official website. You can also find additional resources and FAQs on the ePEF

app.

User Manual (PDF): Download Here

User Guide (PDF): Download Here