

# Cadwell now offers a revolutionary new pH technology

## Airway pH: Why measure?

Until the introduction of Restech's Dx-pH Measurement System, accurate, real-time measurement of airway pH was difficult for the clinician to setup and uncomfortable for the patient. When patients refuse to comply with pH measurement, physicians relied largely on subjective feedback from the patient to confirm a diagnosis. Patients need prompt and accurate pH monitoring because acidic or alkaline extremes can cause damaging effects in the airway and even worse damage to the lungs. The longer and more severe the exposure, the greater the corresponding damage. Complicating the effects of extreme pH is the similarity in symptoms and visual appearance of the epithelium. Likewise, allergies, vocal abuse, sleep apnea and laryngopharyngeal reflux can manifest as symptoms that are difficult, if not impossible, to differentiate.

## Restech's Solution with Cadwell® Integration

The Dx-pH Measurement System measures and records airway pH every 1/2 second for up to 48 hours, while the patient inputs clinically relevant information such as meals, symptoms, and supine position with the press of a button. The patented, miniaturized antimony sensor and reference electrode are housed 0.002° apart in the tip of the Dx-pH Probe, enabling it to measure the aerosolized particles of refluxate in your patient's airway. This sensor is designed to record aerosolized pH data at the back of the airway, without having to place the sensor near the esophagus. This will increase patient comfort and simplify patient setup for clinical staff. All pH data is concurrently and wirelessly transmitted to the Cadwell Sleep system software and Restech DataView software program.



*Dryout Detection*  
using hydration monitoring circuitry, the Dx-System records pH of 15 if dryout occurs

*Teardrop Shape*  
minimizes fouling

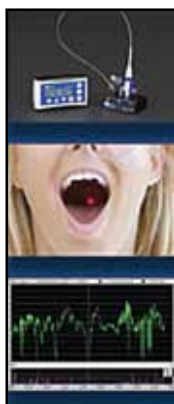
*Red Light-Emitting Diode (LED)*  
assists in visual placement

*Greater Sensitivity*  
with its Antimony-E design  
and sensor face size < 1mm

*Downward Aim*  
reduces masking

## How It Works

1. Set up study



Follow the Dx-Recorder prompts to complete the simple process (usually set-up by office staff).

2. Place the probe

Insert the catheter through the naris and adjust the position until the flashing LED in the probe tip appeared behind the soft palate.

3. Download data

The pH data shows up as a trace and/or digital value in the Cadwell Sleep System software, and customizable reports allow you to add it in to your current sleep reports. Also, the intuitive DataView software calculates reflux events, categorizes correlations and provides a graphic representation of airway pH levels.

## The Results

An 18-48 hour picture of your patient's airway pH levels provides useful evidence-based data to assist with diagnosis and appropriate treatment. Choosing an effective course of treatment just got easier. Your patient will present with a test that is:

- Alkaline
- Acidic
- Mixed Alkaline and Acidic
- Normal pH (Negative)

The pH data and patient input information captured during the study (meal periods, symptom occurrence and supine period) are plotted on the data graph so you can easily develop an appropriate treatment pathway. Monitoring airway pH during a sleep study is particularly relevant for correlating silent reflux with respiratory symptoms and arousals from sleep.

## Why Choose the Dx-pH Measurement System?

- Accurate airway pH measurement
- Faster diagnosis of LPR
- Greater precision in treatment pathway design
- Avoidance of empiric trial and unnecessary exposure to medication
- Up to 48 hours of detailed and charted information
- Time capture and symptom correlation
- Ability to study nocturnal supine period
- Easily interfaces with the Cadwell Sleep system
- pH testing offers valuable information for a sleep study
- Easily disconnect from the Cadwell sleep system in the morning and have the patient come back the next day. You now have 24 hours of pH readings
- Restech offers 24 hour 7 days a week support for the Dx-pH system and Cadwell offers 24 hour 7 days a week support for their PSG system, both ready to support you when you need it



## Product Specifications

One connector is used to connect the Dx-pH system with the Cadwell PSG system (see picture to the right).

The Dx-pH Measurement System (shown right, below) monitors pH in the airway, assisting the sleep physician in determining the relationship between Laryngopharyngeal Reflux and various conditions including:

- Recurrent Laryngitis
- Chronic Cough
- Sinusitis
- Asthma
- Sleep Disordered Breathing
- Chronic Obstructive Pulmonary Disease



## Products

**Dx-pH Probe™** - 202265-000

Hypoallergenic - Contains no latex or PVC.

Model	Channels	Shaft Diameter	Tip Description
Dx-201	1	4.6Fr/1.5mm	teardrop, red LED

**Dx-Transmitter™** - 202263-000

Model	Dimensions	Weight	Battery	Compliance
Dx-300	1 2.75" w 0.88" h 0.60"	25 g	Coin cell CR 1632	IEC 60601-1 FCC 15.247

**Dx-Recorder™** - 202263-000

Model	Dimensions	Weight	Battery	Data Storage
Dx-500	1 4.50" w 2.75" h 1.25"	150 g	2 AA Alkaline	SD™ Memory Card

**Dx-Calibration Vials™** - 202266-000

Model	Contents
Dx-020	pH 7.0 Calibration Solution pH 4.0 Calibration Solution Rinse Solution } NIST Standards

**Dx-Sleep Adapter™** - 202264-000

Model	Cable	Output	Output Voltage
Dx-020	60"	(+1 V) 1/8" Mono male audio jack	(+1 V) 0 to 1 VDC

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