

Using Innovative Technology To Maximize Benefits of Dry Powder Inhalers



How To Use Inhalers

By Akash Dave
Chief Officer Operations

Step 5: Keep the mouthpiece in mouth. Take quick and deep breath

Learn Practice

Lungs full

Deep

Breathe In

Quick

Lungs empty

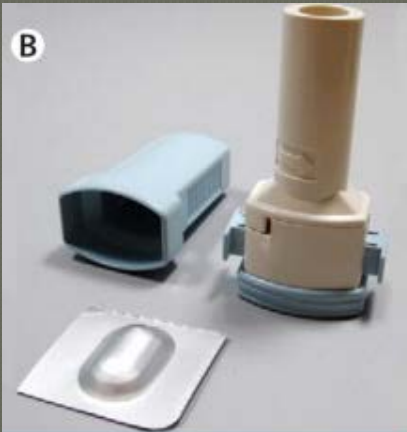
Instructor

Place the mouthpiece in your mouth. Take a quick and deep breath.

Steps ○○○○●○○

Pause

Common Dry Powder Inhalers



Aerolizer



Turbuhaler



HandiHaler



Diskus



Incorrect Inhaler Technique Serious Problem

Problems With Inhaler Use: A Call for Improved Clinician and Patient Education

James B Fink MSc RRT FAARC and Bruce K Rubin MEngr MD MBA FAARC

- \$ 25 billion spent on inhalers
- **\$10 billion wasted** due to poor technique

Incorrect Inhaler Technique is a Serious Problem

Devices Vary

Different types of inhalers require different techniques



Teachings Vary

Lack of clear instructions on correct use of inhalers



Patients Vary

Individual ability to learn the correct inhaler technique

What are the Major Issues?

- **Too many DPI devices - Complex instructions**
- **Patient and provider knowledge needs improvement.**
- **Inhaling Skills can't be learned easily from written or verbal instructions**
- **Patient's don't fully recognize the importance of technique**
- **Busy providers – not able to devote the time needed**
- **Need reinforcement training to be maintain good technique**

Dry Powder Inhalers

Different Breathing Patterns Needed

- (Powdered inhalers) – Inspiratory time is 3 seconds
- (Capsule inhalers) – Inspiratory time is 4 seconds

Problem:

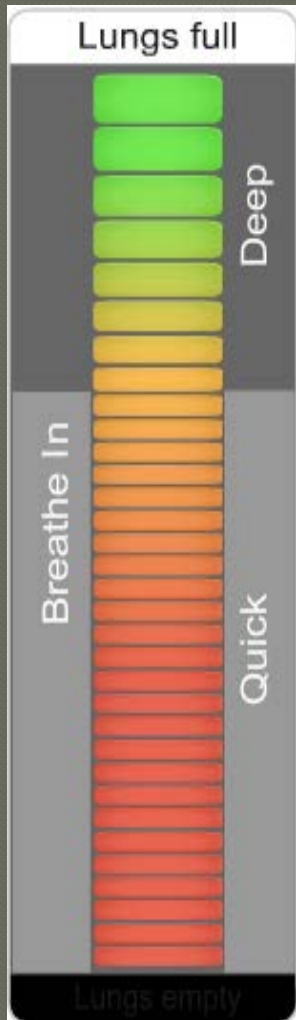
- Lack of Understanding in breathing patterns
- “Quick and Deep” breathing, but at different rates

Solution:

Introducing “Breath Bar” to pace breathing speed, identify the empty lung, full lung and to get efficient medicine into the lungs.

How to Inhale - App

Demonstrated with Breath Bars



Powder-based



Diskus

Twisthaler

Turbuhaler

Flexhaler

Pressair

Handihaler

Aerolizer

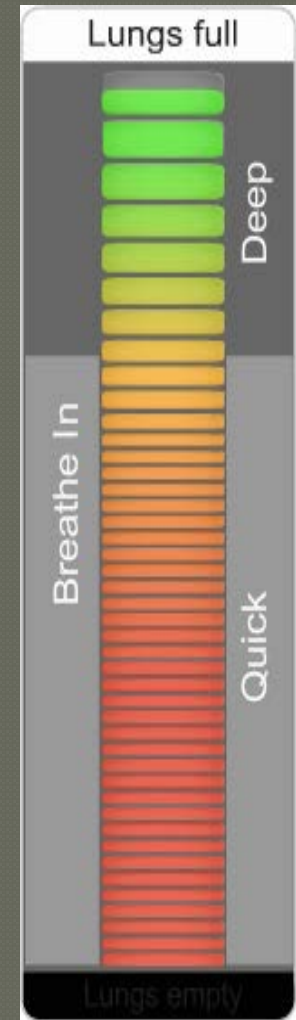
Neohaler

Rotahaler

Octahaler

Revolizer

Lupihaler



Capsule-based

Incorrect Inhaler Technique

- Problem:

Too many steps, complex techniques and poor retention

- Solution:

Interactive audio-visual training & step by step instructions

How to Use Inhaler - App



Incorrect Inhaler Technique

- Learn and Practice with the online Instructor
- Get self assessment in real time

Step 5: Place the mouthpiece and breathe in quickly and deep

How To Use Inhalers
www.inhalers.com

Breathe In Quick Deep

Lunge empty

Steps ○ ○ ○ ○ ● ○ ○ ○

Step 5: Keep the mouthpiece in mouth. Take quick and deep breath

Learn Practice

Instructor

Breathe In Quick Deep

Lunge empty

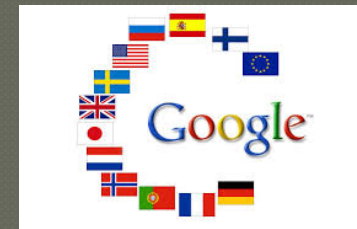
Place the mouthpiece in your mouth. Take a quick and deep breath.

Steps ○ ○ ○ ○ ● ○ ○ ○

Pause

Maximize Benefits of DPI Devices

- Teaching technique in multiple languages
- Training on multiple platforms, smartphones and tablets



“Assist Me with Inhalers” App



Reinforced training for
Health care professionals with CE credits



Take Away Message

1. Web/mobile device based patient education is likely to be more effective and accessible for teaching inhaler technique.
2. Efficient use of DPI devices if prescribed with effective training
3. Many potential ways to use the technology
 - Patient education – in provider office – “inhaler kiosk”, In patient, ER, Pharmacies, Patient home, schools
 - Provider Education – for office/hospital staff, accreditation requirements, CME,
 - Vision to allow physician’s computer (and care plan) to communicate with patient devices and vice versa.