

Does the choice of device matter in COPD and asthma?



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Conflicts of interest

none



Agenda

- Reasons for bad asthma control.
- Why don't they do as we want?
- How to use a device.
- Practical workshop.

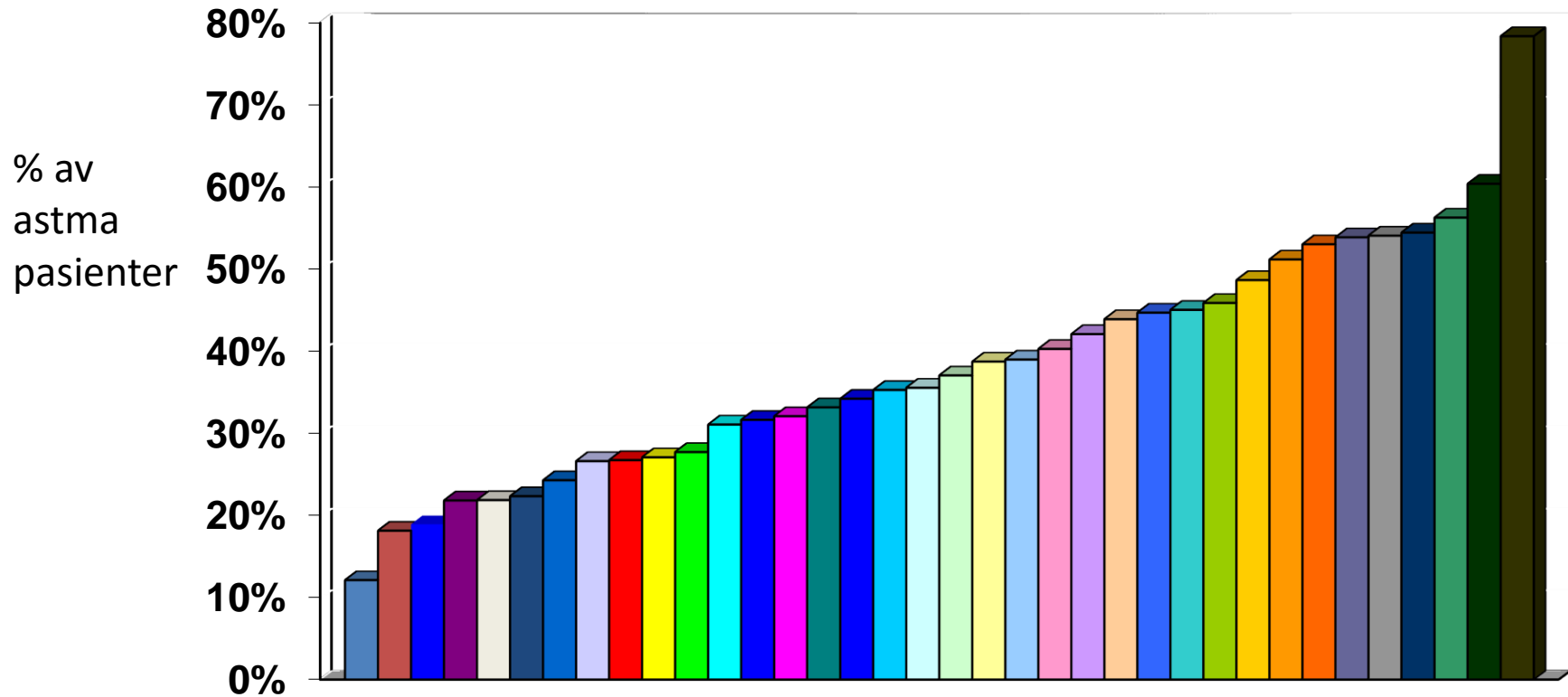


How to assess control:

Symptom:			Symptom control:		
In the last 4 weeks did you :	Yes :	No:	Good control	partly controlled	Poor control
Daytime asthma symptoms < 2 days/week			None of these	1-2 of these	3-4 of these
No limitations on activities					
No nocturnal symptoms or awakenings					
Minimal to no need for reliever or rescue therapy (< 2 days/week)					



Variations in control:



People with good control from different practices in the UK

Reasons for poor control?





Reasons for poor control?:

- Is the diagnosis right?
- Exposure to triggers?
 - Smoking, allergenes.
- Does the patients follow their medication plan?
- How do they use their device?



Diagnosis?

- History

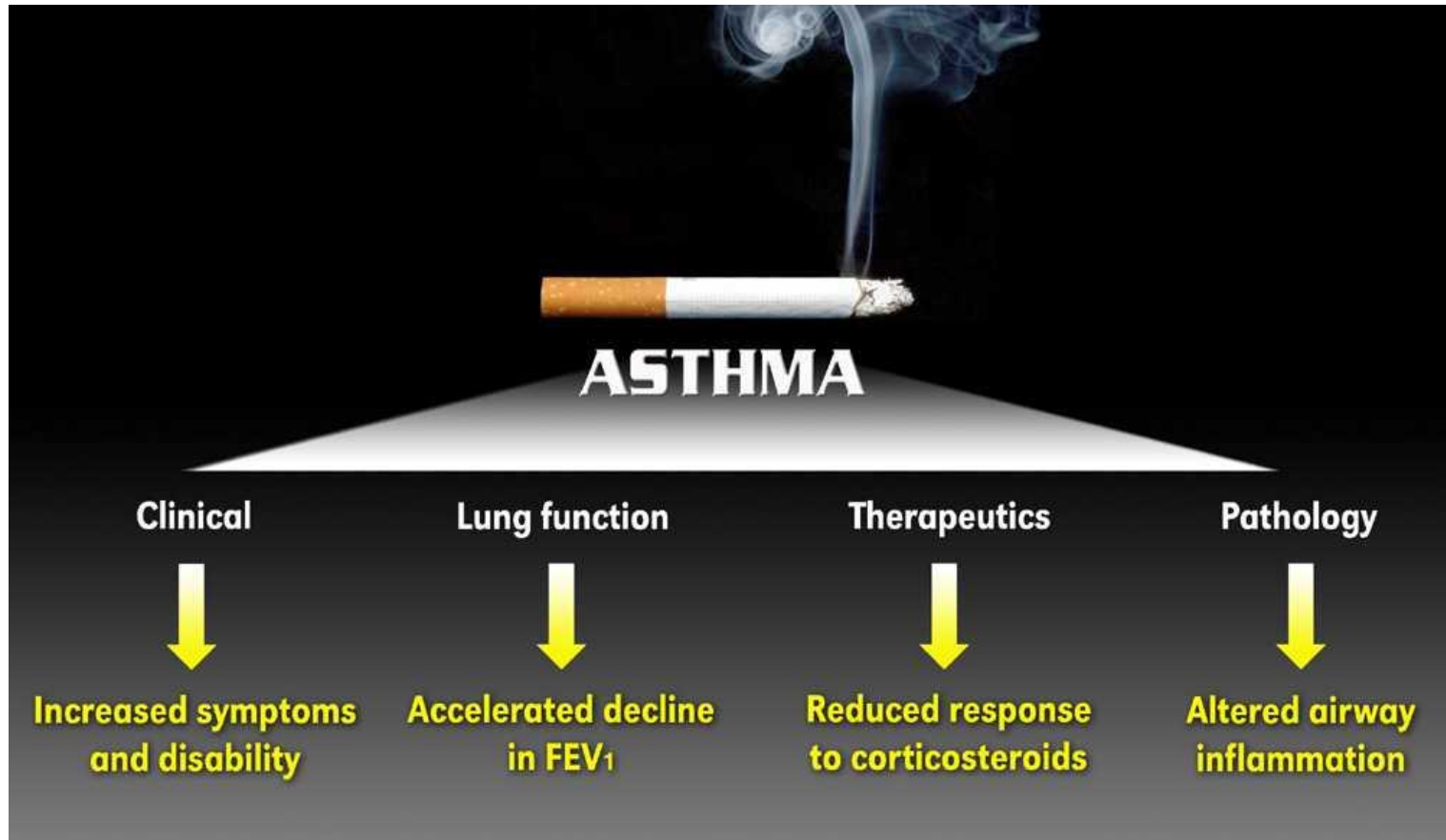
- Investigations

- Does the patient have a variable airways obstruction?
 - Spirometry – reversibility-testing
 - PEF – variation

- Provocation tests:
 - Methacholine/mannitol tests
 - Show bronkial hyperreactivity which might indicate asthma



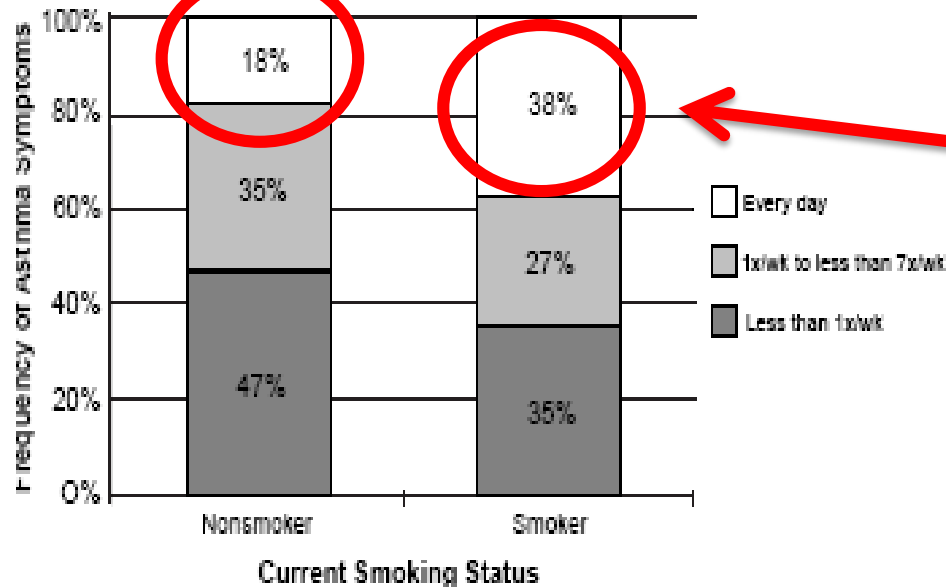
Smoking?





Smoking and asthma symptoms

Figure 2. Frequency of Asthma Symptoms by Current Smoking Status, Oregon, 2001



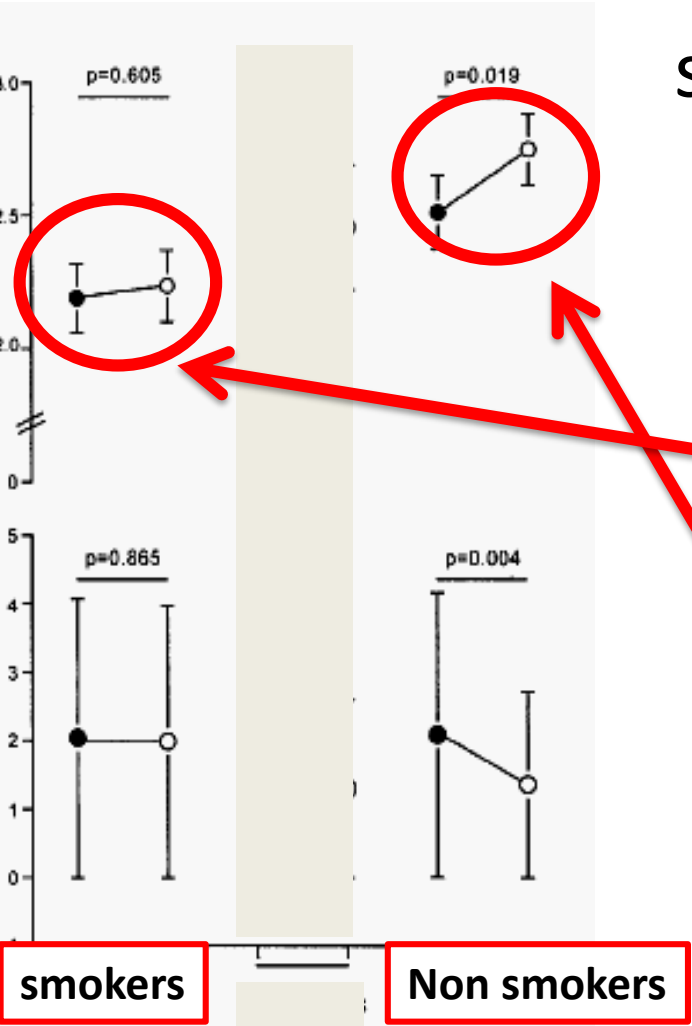
- Smokers have poorer control than non-smokers
- 38% of smokers have **daily** symptoms only 18% of nonsmokers



Steroid resistens in smokers with asthma

Fev1

Asthma control



■ It has been demonstrated that smokers respond less to steroids than nonsmokers.

Before and after prednisolon for 10 days



Do they follow their medication plan?

- We often forget to assess adherence.
- Many patients do not take their medication.
- For different reasons.

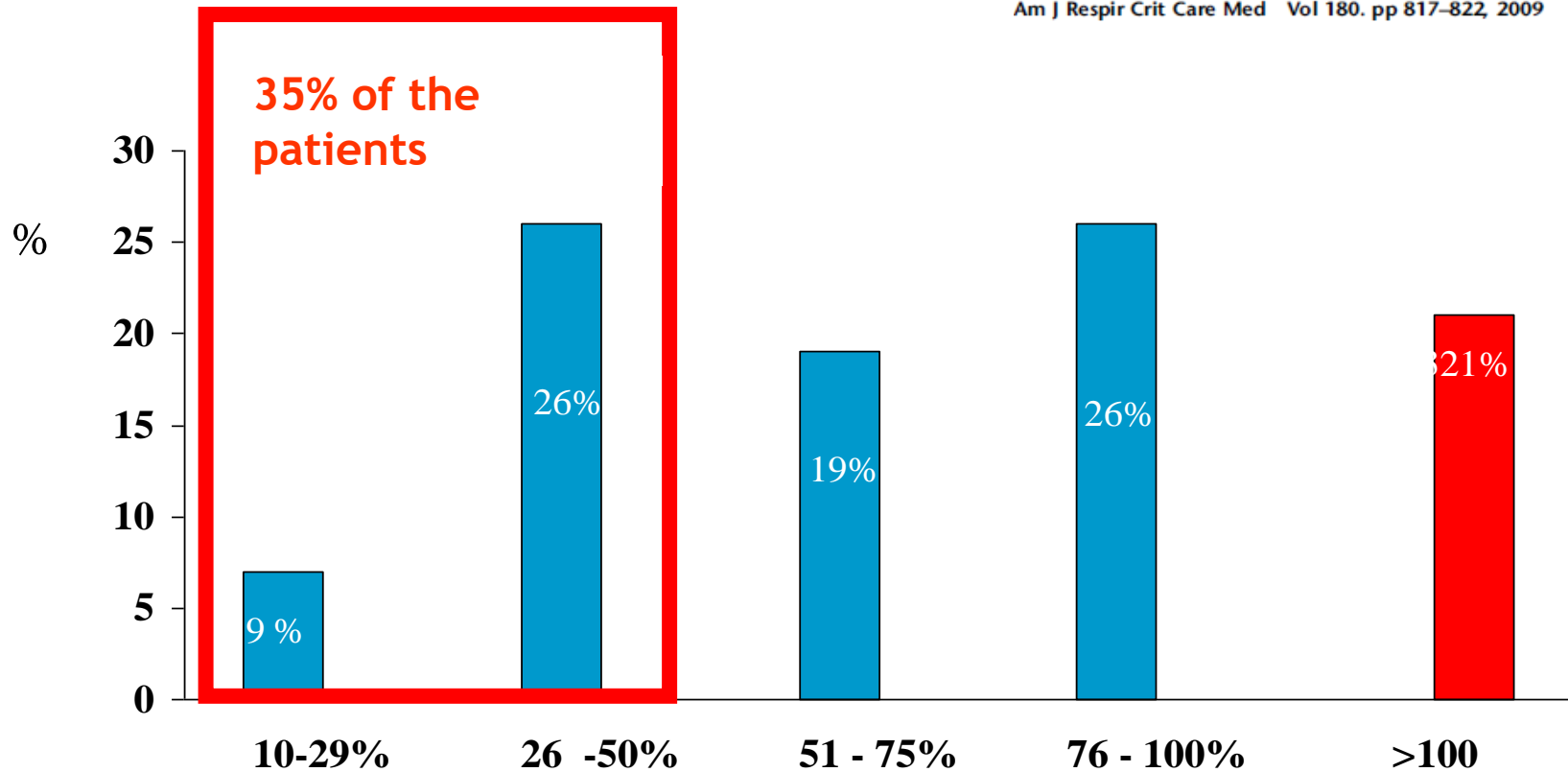
Patients referred to a specialist clinic for «Difficult to manage asthma»



The Prevalence of Nonadherence in Difficult Asthma

Jacqueline Gamble^{1,2}, Michael Stevenson³, Elizabeth McClean⁴, and Liam G. Heaney¹

Am J Respir Crit Care Med Vol 180, pp 817-822, 2009



% of inhalers filled over 6 month period



Why don't they do as we want?

- ***Unintentional***: Patient has been unable to follow the medication plan.
 - Forgot, did not understand when, why or what to take, language problems, unable to see their device). Studies have shown that 5-10% do not remember what the doctor said
- ***Intentional***: Patient changes dosage or does not take prescribed medication.
 - Reduced dose, » I don't take more than I have to«. «steroids are dangerous»



Non adherence

Action - Provide training on self-management skills

Your Regular Treatment:

1. Each day take _____
2. Before exercise, take _____

WHEN TO INCREASE TREATMENT

Assess your level of Asthma Control

In the past week have you had:

- | | | |
|---|----|-----|
| Daytime asthma symptoms more than 2 times ? | No | Yes |
| Activity or exercise limited by asthma? | No | Yes |
| Waking at night because of asthma? | No | Yes |
| The need to use your [rescue medication] more than 2 times? | No | Yes |
| If you are monitoring peak flow, peak flow less than _____? | No | Yes |

If you answered YES to three or more of these questions, your asthma is uncontrolled and you may need to step up your treatment.

HOW TO INCREASE TREATMENT

STEP-UP your treatment as follows and assess improvement every day:

_____ [Write in next treatment step here]

Maintain this treatment for _____ days [specify number]

WHEN TO CALL THE DOCTOR/CLINIC.

Call your doctor/clinic: _____ [provide phone numbers]

If you don't respond in _____ days [specify number]

_____ [optional lines for additional instruction]

EMERGENCY/SEVERE LOSS OF CONTROL

- ✓ If you have severe shortness of breath, and can only speak in short sentences,
- ✓ If you are having a severe attack of asthma and are frightened,
- ✓ If you need your **reliever medication** more than every 4 hours and are not improving.

1. Take 2 to 4 puffs _____ [reliever medication]
2. Take _____ mg of _____ [oral glucocorticosteroid]
3. Seek medical help: Go to _____; Address _____
Phone: _____
4. Continue to use your _____ [reliever medication] until you are able to get medical help.

Written action plan



Asthma Action Plan

Take your completed Asthma Action Plan in to your doctor. The more prepared you are, the better.



.....

NAME _____ **DATE** _____

DOCTOR _____

PHONE FOR DOCTOR OR CLINIC _____

EMERGENCY 911 OR _____

MY BEST PEAK FLOW READING WHEN I AM FEELING FINE IS _____

GREEN : USE YOUR CONTROLLER MEDICINE EVERY DAY.

Breathing is good.

- No cough or wheeze
- Can work and play

.....

PEAK FLOW READING ABOVE _____

MEDICINE _____

HOW MUCH TO TAKE _____ **WHEN TO TAKE IT** _____

YELLOW : TAKE RESCUE (QUICK-RELIEF) MEDICINE WHEN YOU HAVE A FLARE-UP.

You are having a flare-up.

- Cough or wheeze
- Tight chest
- Waking up at night

.....

PEAK FLOW READING BETWEEN _____ **AND** _____

MEDICINE _____

HOW MUCH TO TAKE _____ **WHEN TO TAKE IT** _____

RED : GET HELP FROM A DOCTOR NOW!

You are having a serious flare-up.

- Rescue (quick-relief) medicine isn't helping
- Breathing hard and fast
- Can't walk or talk well

.....

PEAK FLOW READING BELOW _____

MEDICINE _____

HOW MUCH TO TAKE _____ **WHEN TO TAKE IT** _____

NOTES _____



Why intentional nonadherence?

- Patients understanding of the disease and its treatment is the main reason.
 - Studies show the patients beliefs are important for the outcome.
- **Doubts about personal need for the medication and fear of potential side effects.**



«Common sense model» -

- People do not always follow our advice even if we know them well.
- They make their choice based upon **their own** understanding and perceptions of the disease



In people with asthma.

- Patients with a «medical understanding»:
 - Chronic disease with periodical episodes of worsening
 - Corticosteroids are necessary

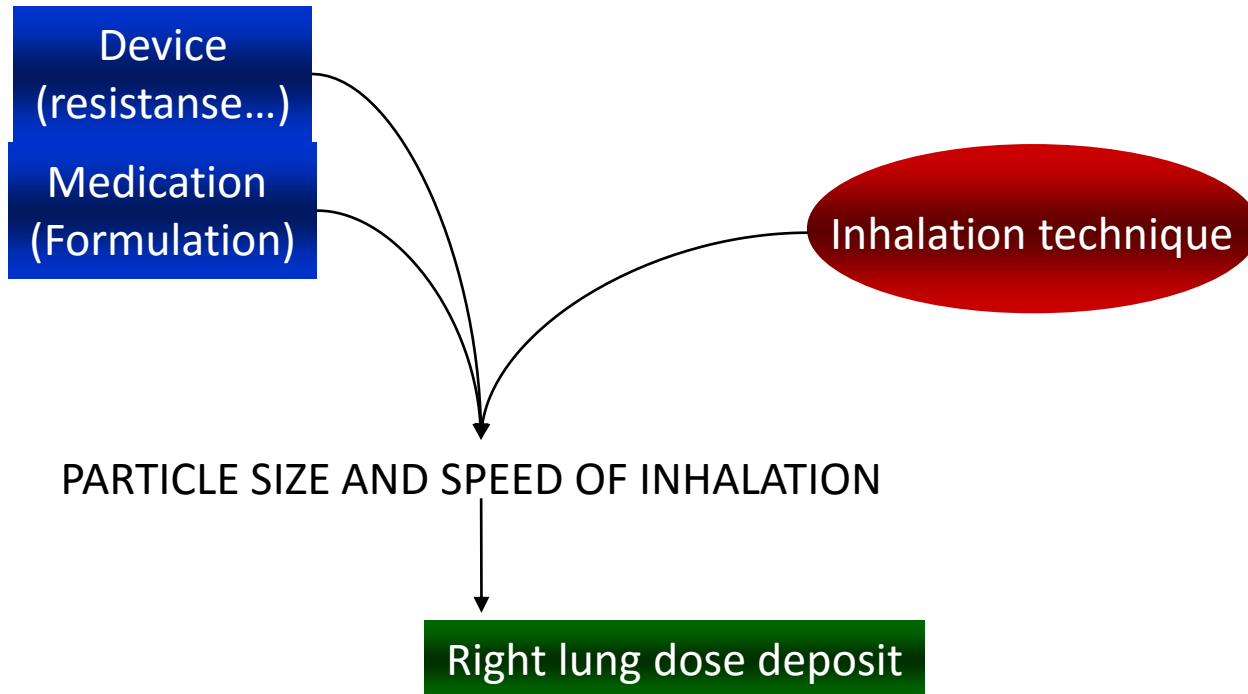
- Patients with a «non-medical understanding»:
 - Believe they have the disease only when symptomatic.
 - Periodical use of ICS.
 - Fear side effects more than the disease –do not take ICS



Remember to check non-adherence

- Have you forgotten to take your medication some days?

Prinsiples of inhaler therapi



- Metered dose Inhalers (MDIs) and breath actuated MDIs blows the medication into the airways
- Dry powder inhalors (DPIs) (discus,turbuhaler) inhalation pulls medictions into the airways
- An ideal inhalator independent of the patient does not exist

Flow problem



- Dry powder inhalors (DPIs)

Inhale as fast as you can –
but how fast?

- Metered dose Inhalers (MDIs)

Inhale deeply and slowly

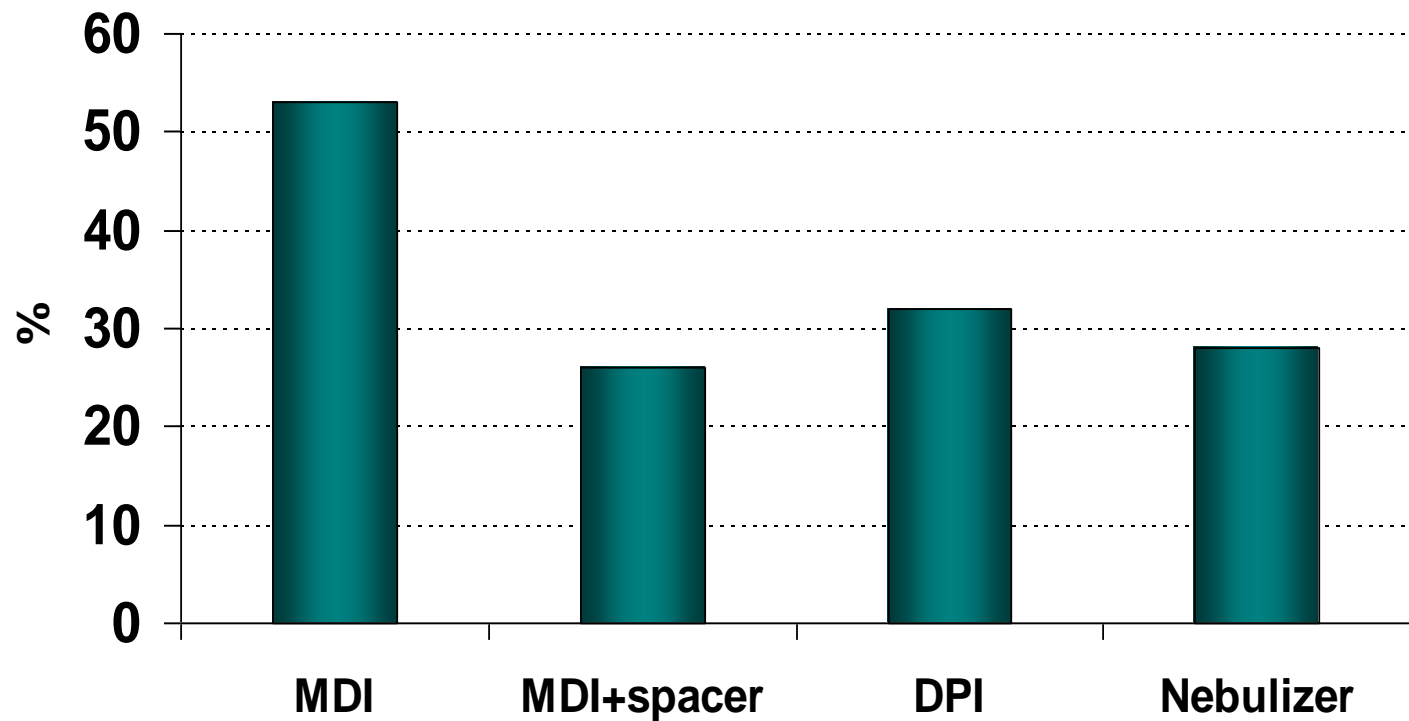
But how slow and deep?

coordination?



How many patients do we believe make errors

Proportion of misusers by device according to physicians





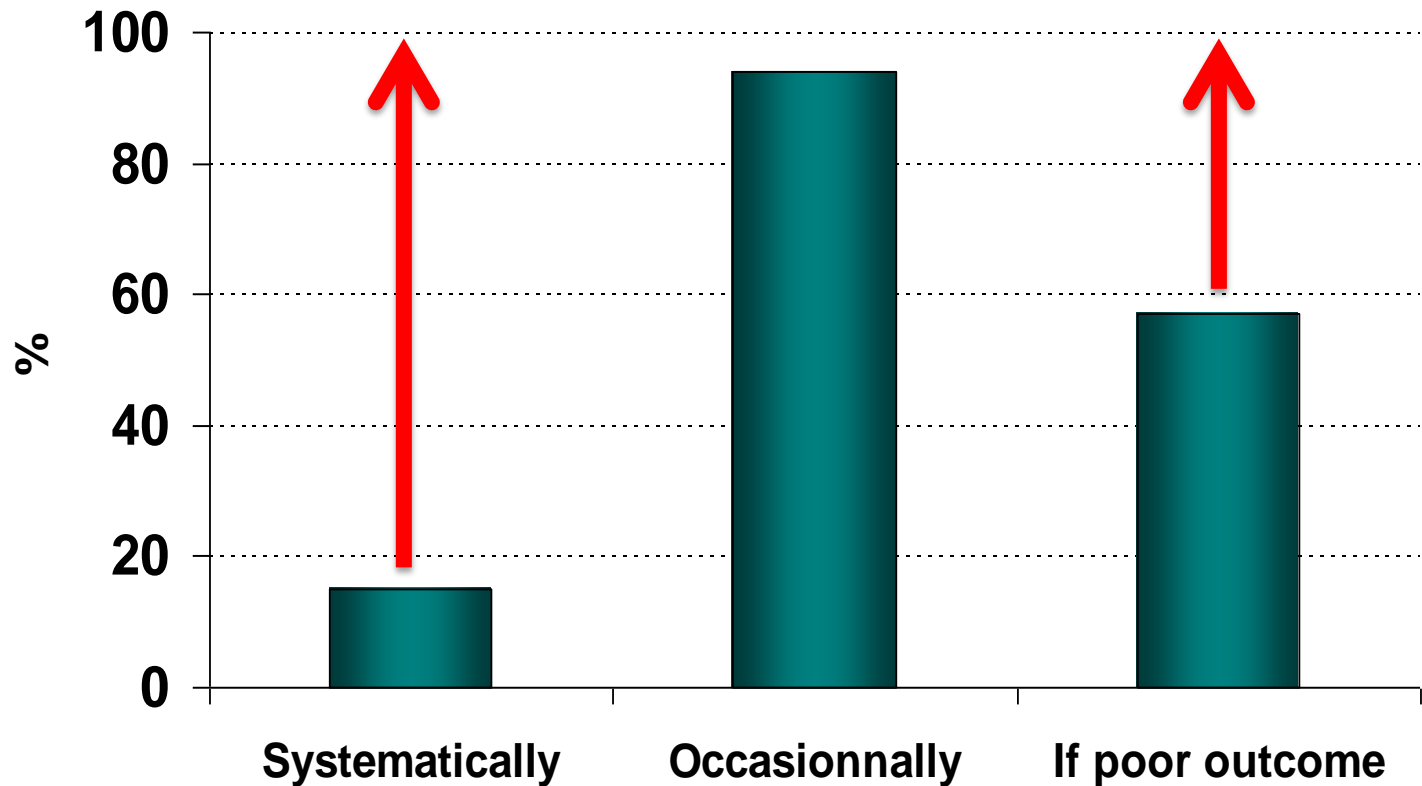
Do you check inhalation technique?



Do we check?



Checking inhalation technique according to physicians





Do we know how?

■ Lung specialist

■ GP

■ Pharmacists

■ Nurses

How many made errors

15%

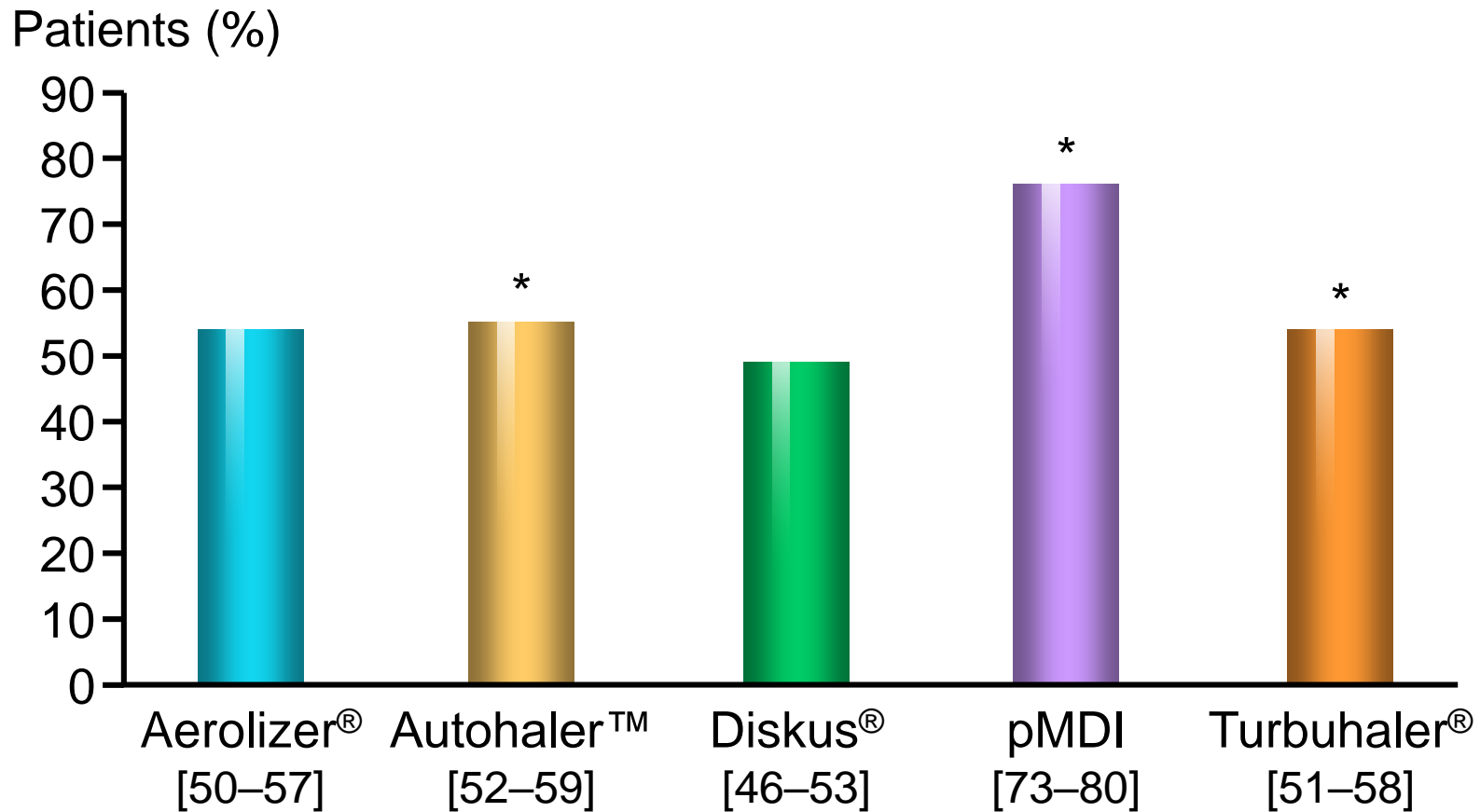
63%

55%

65%



Percentage of patients making at least one error in using their inhaler



*p<0.05 compared to the best result (95% CI)



Device-independent errors

- Failure to exhale before inhalation
- Failure to hold their breath for a few (3) seconds after inhalation

40–47% of patients

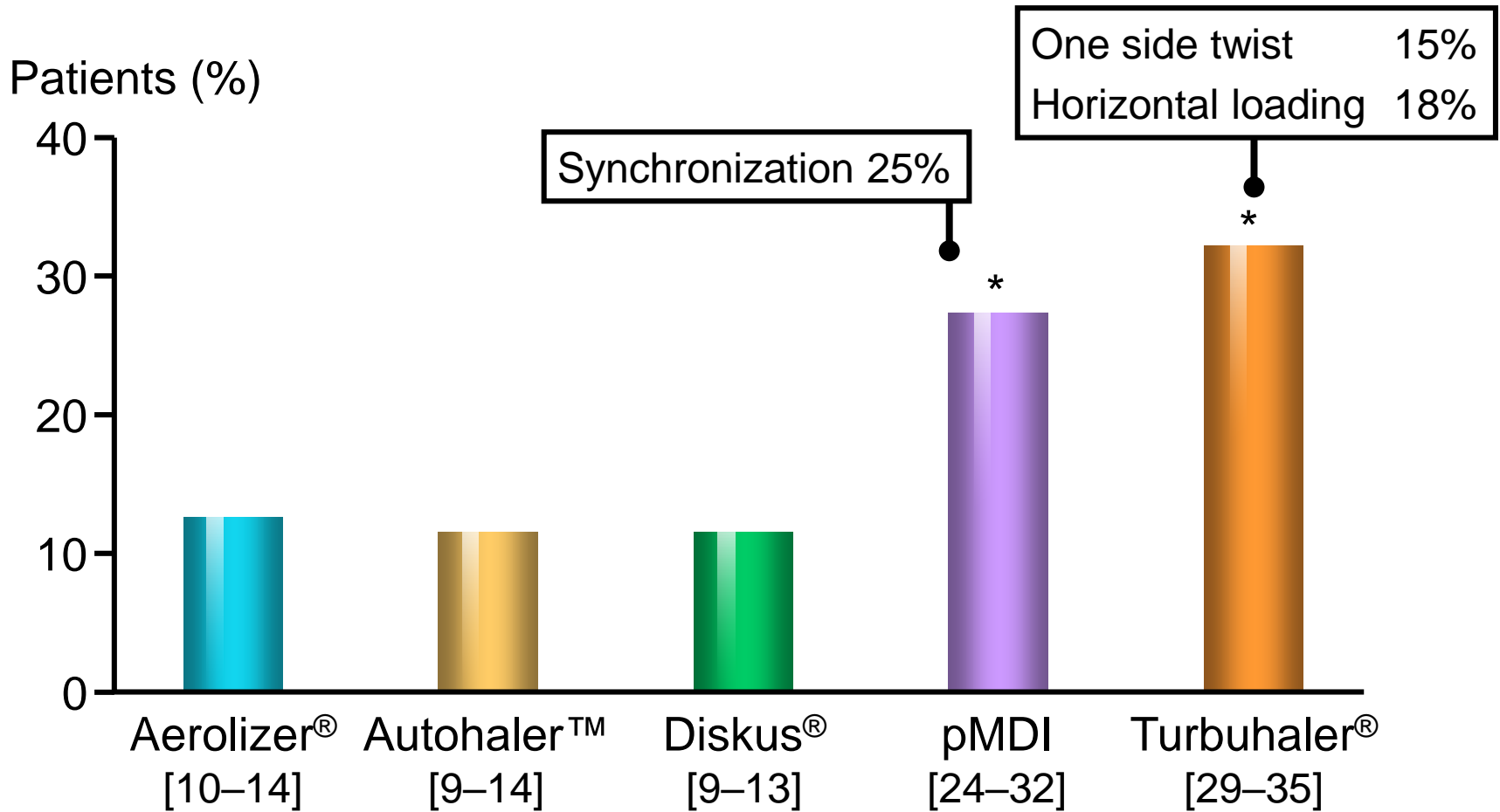


Device-specific critical errors

- **Aerolizer[®]**: Failure to insert capsule, failure to press and release buttons
- **Autohaler[™]**: Failure to raise lever to vertical position
- **Diskus[®]**: Failure to slide the lever
- **MDI**: Poorly synchronized hand actuation and inhalation
- **Turbuhaler[®]**: Failure to hold the inhaler upright when twisting the grip, failure to twist the grip in both directions



Percentage of patients making at least one critical error



*p<0.05 compared to the best result (95% CI)

