Case Study

Asthma

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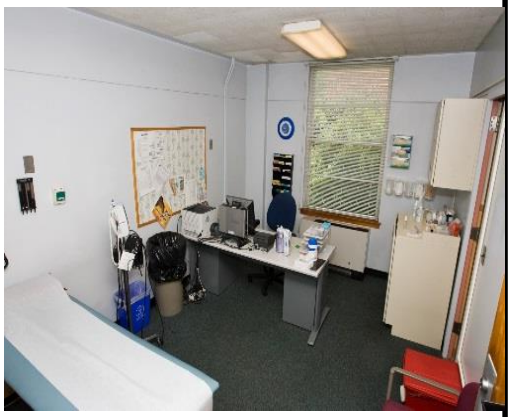
Nasal cavity
Oral cavity
Pharynx
Epiglottis

CASE STUDY: JANE

Click here to start!

Jane comes to visit Dr Taylor; she has been experiencing some recent issues with her asthma...



Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

Patient background and history

Dr Taylor must first explore Jane's background and medical history…

Patient background

Medical history

Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

Patient background

Jane is recalling her story to Dr Taylor…

I am 36-years-old and I work as a secretary

I live in a flat in a suburban area with my husband and daughter

My mother has asthma, and so does my 7-year-old daughter

Explore patient background and history

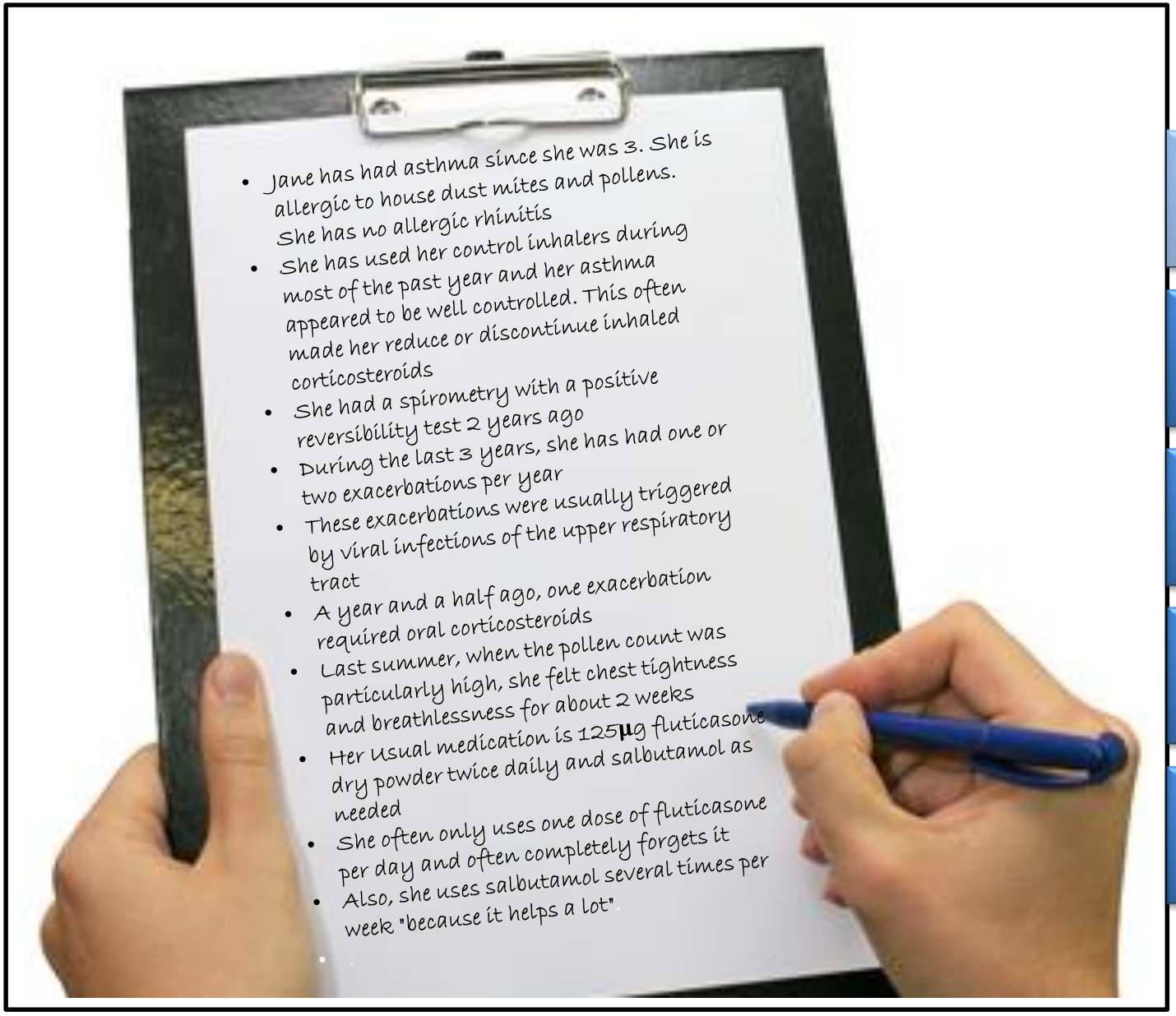
Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

Medical History



Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

Clinical assessment and symptoms

What else does Dr Taylor need to **check** about Jane's asthma? Choose the boxes below to explore the **4 key priorities she needs to know** about Jane's asthma symptoms and triggers…

Click on the boxes to reveal the results

Check for isolated cough with no other respiratory symptoms

Check for chronic production of sputum

Check if symptoms vary over time and in intensity

Check if symptoms are often worse at night or in the early morning

Check for asthma triggers:
- viral infections
- exercise
- allergen exposure

Check if there is more than one type of symptom:
- wheeze
- shortness of breath
- cough
- chest tightness

HOTSPOT: asthma triggers

HOTSPOT: asthma symptoms

Assessment of symptom control

Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

GINA assessment of symptom control

Dr Taylor reflects on the important factors to discuss with Jane, ticking them off as she goes along…

Asthma Assessment Key Considerations Checklist

HOTSPOT: Asthma management goals

Asthma control – two domains
- Assess symptom control over the last 4 weeks
- Assess risk factors for poor outcomes, including low lung function

HOTSPOT: Assessment of symptom control

Treatment issues
- Check inhaler technique and adherence – ask about side effects
- Does Jane have a written PAAP?
- What are Jane's attitudes and goals for her asthma management?

HOTSPOT: PAAP

Comorbidities

Comorbidities
- Think of the following comorbidities:
  - rhinosinusitis
  - GORD
  - obesity
  - obstructive sleep apnoea
  - depression
  - anxiety
- These may contribute to symptoms and poor quality of life

Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

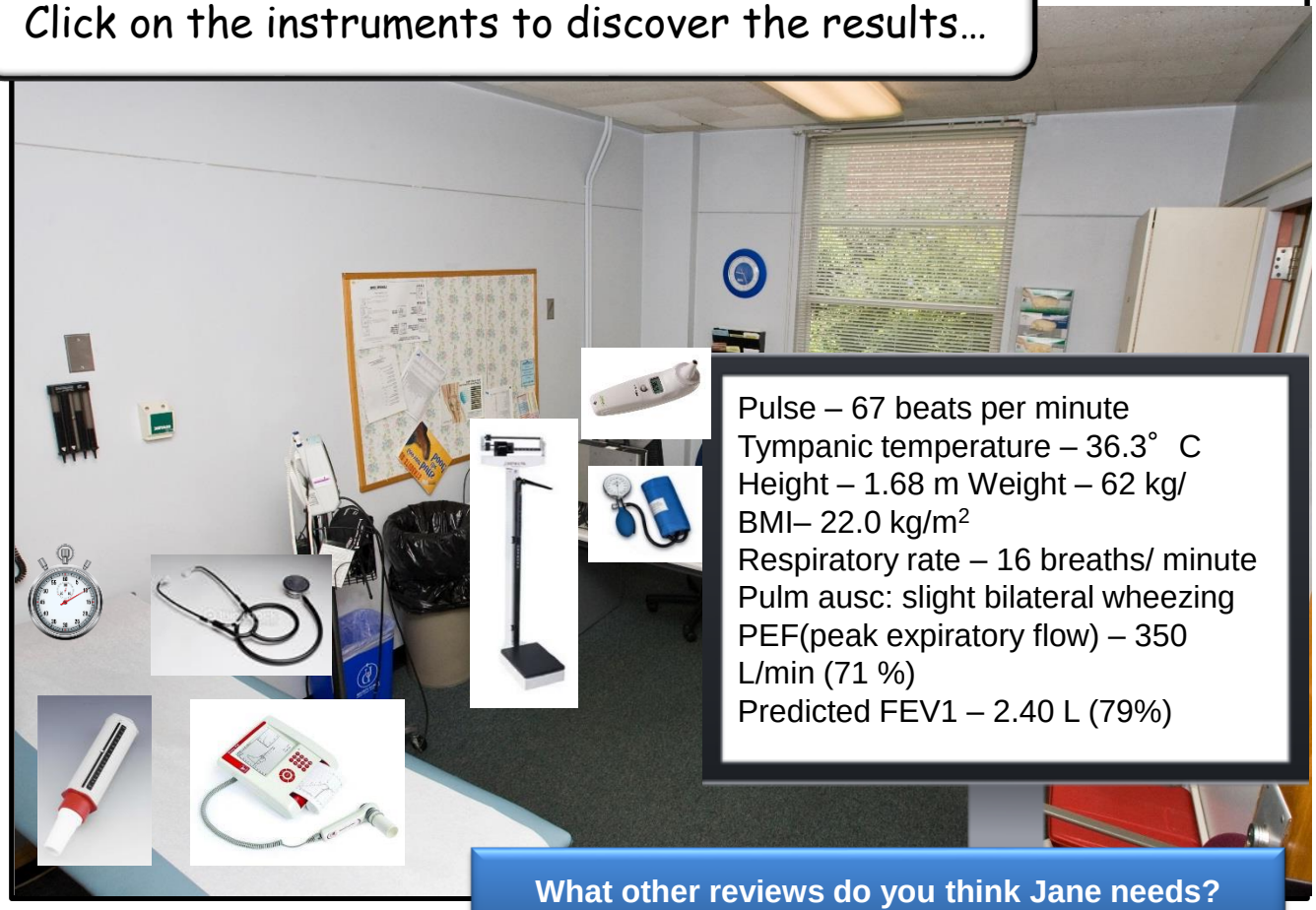
Review my case

GORD = gastro-oesophageal reflux disease; PAAP = personalised asthma action plan.

1. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016. Available from: www.ginasthma.org.

Physical exam

Dr Taylor performs a clinical assessment on Jane.
Click on the instruments to discover the results…



Pulse – 67 beats per minute
Tympanic temperature – 36.3° C
Height – 1.68 m Weight – 62 kg/
BMI– 22.0 kg/m^2
Respiratory rate – 16 breaths/ minute
Pulm ausc: slight bilateral wheezing
PEF(peak expiratory flow) – 350 L/min (71 %)
Predicted FEV1 – 2.40 L (79%)

What other reviews do you think Jane needs?

Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

BMI = body mass index; BP = blood pressure; FEV_1 = forced expiratory volume in 1 second; PEFR = peak expiratory flow rate

I need to find out more information

Help Dr Taylor explore which additional assessments and information she requires in order to make a decision about Jane's treatment…

1. Request another spirometry?
2. Assess asthma symptoms in the past 4 weeks?
3. Confirm the allergy to house dust mites?
4. Assess risk factors for poor outcomes?
5. Request a chest X-ray?
6. Understand Jane's perspective on using inhalers?

Review assessment priorities

Explore patient background and history

Clinical assessment and symptoms

Physical exam

I need to find out more information

Review my case

I need to find out more information

Help Dr Taylor choose what else she needs to know in order to make a decision about treatment…

Click on the bubbles to reveal the results

1. Smoking status — Jane confirms that she does not smoke
2. Other comorbidities — Jane confirms she has no allergic rhinitis and no other comorbidities
3. Other allergic sensitisations — Jane confirms she has an allergic sensitisation to house dust mites and has no other allergic sensitisations
4. Patient preferences and expectations — Jane confirms she understands her treatment and is comfortable with her inhaler, though she is worried about side effects. Dr Taylor reassures her of the benefits of the inhaler and checks her device technique

Explore patient background and history

Clinical assessment and symptoms

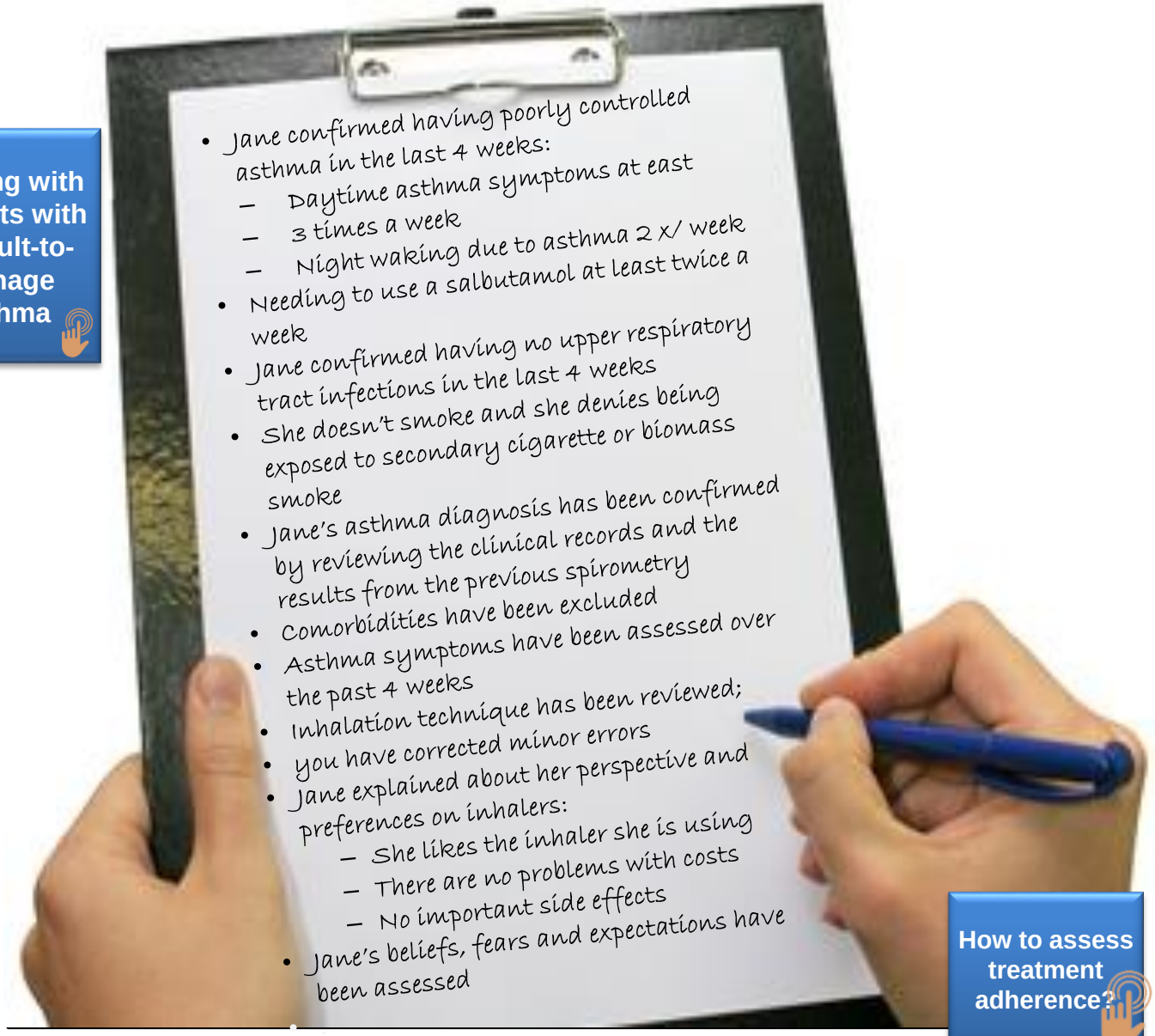
Physical exam

Review my case

I am ready to make a decision

Dr Taylor thinks she is now ready to make her decision. Before doing that, Dr Taylor wants to review Jane's case…

What do I already know about Jane?



Dealing with patients with difficult-to-manage asthma

Explore patient background and history

Clinical assessment and symptoms

Physical exam

Review my case

I am ready to make a decision

How to assess treatment adherence?

6.0 I am ready to make a decision

Dr Taylor choose non-pharmacological and pharmacological approaches from the options below that you think may help Jane…

Non-pharmacological approaches

HOTSPOT
non-pharmacological treatment

"Hmmm, what is the preferred treatment approach for Jane…"

- Avoidance of tobacco smoke exposure ✓
- Check inhaler technique and adherence ✓
- Physical activity ✓
- Allergen avoidance ✓

Pharmacological approaches

- Explore patient background and history
- Clinical assessment and symptoms
- Physical exam
- Appointment summary

I am ready to make a decision

Dr Taylor choose non-pharmacological and pharmacological approaches from the options below that you think may help Jane…

Pharmacological approaches

Click on the bubbles to reveal the correct and incorrect options

"Hmmm, what is the preferred treatment approach for Jane…"

- As-needed SABA only ✗
- Low-dose ICS with as-needed SABA ⓘ ?
- Combination low-dose ICS/LABA with as-needed SABA ✓
- Combination low-dose ICS/formoterol maintenance and reliever regimen ✓
- LTRA with as-needed SABA ✗
- Intermittent ICS with as-needed SABA ✗

GINA Step 3

Review treatment options

Explore patient background and history

Clinical assessment and symptoms

Physical exam

Appointment summary

ICS = inhaled corticosteroid; LABA = long-acting β_2 agonist; LTRA = leukotriene receptor antagonist; SABA = short-acting β_2 agonist.

Appointment summary

After seeing Jane out of the office, Dr Taylor writes up her thoughts on Jane's appointment…

S: Flare-ups when Jane has upper Respiratory tract infections (1 or 2 in the last 3 years, one required treatment with oral steroids. Chest tightness and shortness of breath.

Usual medication: 125 µg fluticasone + salbutamol for relief: Jane uses a lot of salbutamol because she feels better. Bad adherence to control treatment.

Jane's fears and expectations were addressed. Modifiable risk factors were addressed.

O: Pulmonary auscultation: slight bilateral wheezing

Spirometry (2017): obstructive pattern with a positive reversibility test. Sensitisation to house dust mites as confirmed with prick tests and specific IgE for house dust mites.

A: Uncontrolled asthma

P: Pharmacotherapy options: 1. Low dose ICS-LABA for maintenance + as-needed low dose ICS-formoterol. 2. ICS/LABA maintenance + with as-needed SABA. 3. Consider *ICS-formoterol for maintenance and relief*. Review inhalation technique; **Promote self-care and patient enablement**

Explore patient background and history
Clinical assessment and symptoms
Physical exam
Appointment summary
ASTHMA RIGHT CARE
Questions?

ICS = inhaled corticosteroid; FEV_1 = forced expiratory volume in 1 second; LABA = long-acting β_2 agonist; LTRA = leukotriene receptor antagonist; SABA = short-acting β_2 agonist. S - week

*Approved only for low dose beclomethasone / formoterol at low dose budesonide / formoterol

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018. Available from: www.ginasthma.org.

WHAT IS ASTHMA RIGHT CARE?

ASTHMA RIGHT CARE

ASTHMA RIGHT CARE
Movement for Global Change

International Primary Care IPCRG Respiratory Group

Asthma Right Care:
a movement for Global Change

Over reliance on SABA's?

ASTHMA RIGHT CARE

IPCRG

WHAT IS ASTHMA RIGHT?

ASTHMA RIGHT CARE

	Increasing SABA use*											
Number of SABA inhalers Rx per year	1	2	3	4	5	6	7	8	9	10	11	12
Puffs of SABA used per year	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400
Puffs of SABA used per week	4	8	12	15	19	23	27	31	35	39	42	46
Puffs of SABA used per day	<1	1	2	2	3	>3	4	>4	5	6	>6	7
	Symptoms											

*Some devices do not contain 200 puffs. Check the number in the devices you prescribe/dispense or use, and modify these messages accordingly

ASTHMA SLIDE RULE (reverse side: push slider back to left to begin)

2. Questions for prescriber to ask themselves and a person with asthma

Reflecting on your answer to Question 1, and using the number scale 0–10 below, slide to the number that reflects:

- How important is it that you organise a review? What made you select [number]? What would have made it a higher number [eg 8]
- How confident do you feel to have a conversation about reducing the dose? What made you select [number]? What would have made it a higher number [eg 8]?

0	1	2	3	4	5	6	7	8	9	10

0 = Not at all important/confident — Extremely important/confident = 10

ASTHMA RIGHT CARE

QUESTION & CHALLENGE CARDS

Short-acting beta$_2$ agonist (SABA) set

IPCRG

INTRODUCTION

The charity International Primary Care Respiratory Group (www.IPCRG/aboutus) is leading an international pilot that is exploring how to use social movement approaches to create a desire for change in the management of asthma.* Our focus, in the first phase, is on the over-reliance on short-acting beta$_2$ agonists (SABAs), and testing how to create a sense of discomfort and dissatisfaction with this amongst all stakeholders.

We set up a multi-national Delivery Team from four pilot countries, Canada, Portugal, Spain and the UK that includes patients, pharmacists, GPs and nurses. The Team has been discussing and designing ways to start conversations and these cards are one of our ideas that we are testing.

** The IPCRG has received funding from AstraZeneca to run the Delivery Team and pilots and for designing and printing these cards. The Delivery Team is responsible for the content.*

OUR "HUNCHES" DRIVING THIS PROGRAMME ARE THAT

- Whilst there is over-reliance, there is no consensus on what "over-reliance" looks like
- The initial conversations about SABAs that may effect a person's use in the future occur in many places eg community pharmacies and emergency departments as well as primary care
- We don't really know what people do if they don't come regularly to the practice
- Amongst the non-respiratory interested workforce, asthma is regarded as a low priority for change
- Previous approaches haven't really shifted that despite the evidence suggesting unwarranted variation in outcomes and avoidable mortality, morbidity and healthcare utilisation
- Without an appetite to change, it is difficult for messages about how to improve asthma care to be received and adopted

These cards are a way to trigger conversations about these hunches and for you to share your thinking with others. A few have right answers (and we give those) but the majority don't, so we invite you to use them to start a discussion!

We also have a novel "SABA slide rule" in development. Contact projectsupport@theipcrg.org if you want to know more.

February 2018

ASTHMA RIGHT CARE — IPCRG

QUESTION & CHALLENGE CARDS

Short-acting beta$_2$ agonist (SABA) set

INSTRUCTIONS

1. Split into pairs or small groups
2. Choose a card from the pack
3. Read the question or comment
4. Take a few minutes to discuss the question or comment on the card and note down your key discussions points
5. Choose another card and follow steps 3 and 4 above
6. Feedback your discussion points to the full team

Do you agree that asthma management is a global healthcare problem because:

1. There is unwarranted variation (ie variation that cannot be explained by variation in patient illness or preference)
2. Failure to prevent death and disability
3. Waste of human and physical resources through low value activity
4. Harm from overdiagnosis and overtreatment even when quality is high

Questions?

Thank you for your attention!

International Primary Care Respiratory Group
IPCRG

ASTHMA RIGHT CARE

What other clinical assessments do you think Jane needs?

- Jane had a spirometry with a positive reversibility test 2 years ago
- Many primary health centres will have delayed access to spirometry; not allowing Dr Taylor to manage Jane's asthma on the same day
- Spirometry could be helpful to manage Jane's asthma, if it was available at the primary health centre
- If possible, a spirometry test could be ordered for Jane's follow-up appointment

What other clinical assessments do you think Jane needs?

Jane confirmed that **in the past 4 weeks she:**

- had **daytime** asthma **symptoms 3 or 4 times a week**
- had **night wakening** due to asthma once or twice a week
- was unable to walk upstairs due to shortness of breath
- **needed to use salbutamol** at least twice / week, to be able to breath
- had not had an upper respiratory tract infection
- **didn't smoke, and she wasn't exposed to smoke**

ASTHMA RIGHT CARE

What other clinical assessments do you think Jane needs?

- Jane has allergic sensitisation to house dust mites as confirmed with **prick tests** and **specific IgE** some years ago
- It is unnecessary to repeat Jane's house mite allergy test to acquire information required for the immediate management of the situation

Please note:

- Allergic sensitization to a given allergen, a positive IgE test, does not imply allergic disease
- Testing for allergy should therefore be reserved for cases where there is a strong suspicion regarding the allergen (agent)

IgE = immunoglobulin E.

What other clinical assessments do you think Jane needs?

- **A review of potential risk factors for exacerbations would be appropriate**
- Factors to consider include:
  - **Uncontrolled asthma symptoms**
- Additional potentially modifiable risk factors for exacerbations, even in patients with few asthma symptoms, include:
  - Medications: ICS not prescribed; **poor adherence**; incorrect **inhaler technique**;
  - **High SABA use** (with increased mortality if >1x200-dose canister/month)
  - **Comorbidities**: obesity; chronic rhinosinusitis; gastro-oesophageal reflux disease; confirmed food allergy; anxiety; depression; pregnancy
  - **Exposures**: smoking; allergen exposure if sensitized; air pollution
  - Setting: major **socioeconomic problems**
  - **Lung function**: low FEV1, especially if <60% predicted; higher reversibility
  - **Other tests**: sputum/blood eosinophilia; elevated FENO in allergic adults on ICS
  - **Other** major independent risk factors for flare-ups (exacerbations) include **ever being intubated** or in **intensive care** for asthma
  - Having **1 or more severe exacerbations** in the last 12 months.

FEV_1 = forced expiratory volume in 1 second. FeNO - Fractional exhaled nitric oxide

What other clinical assessments do you think Jane needs?

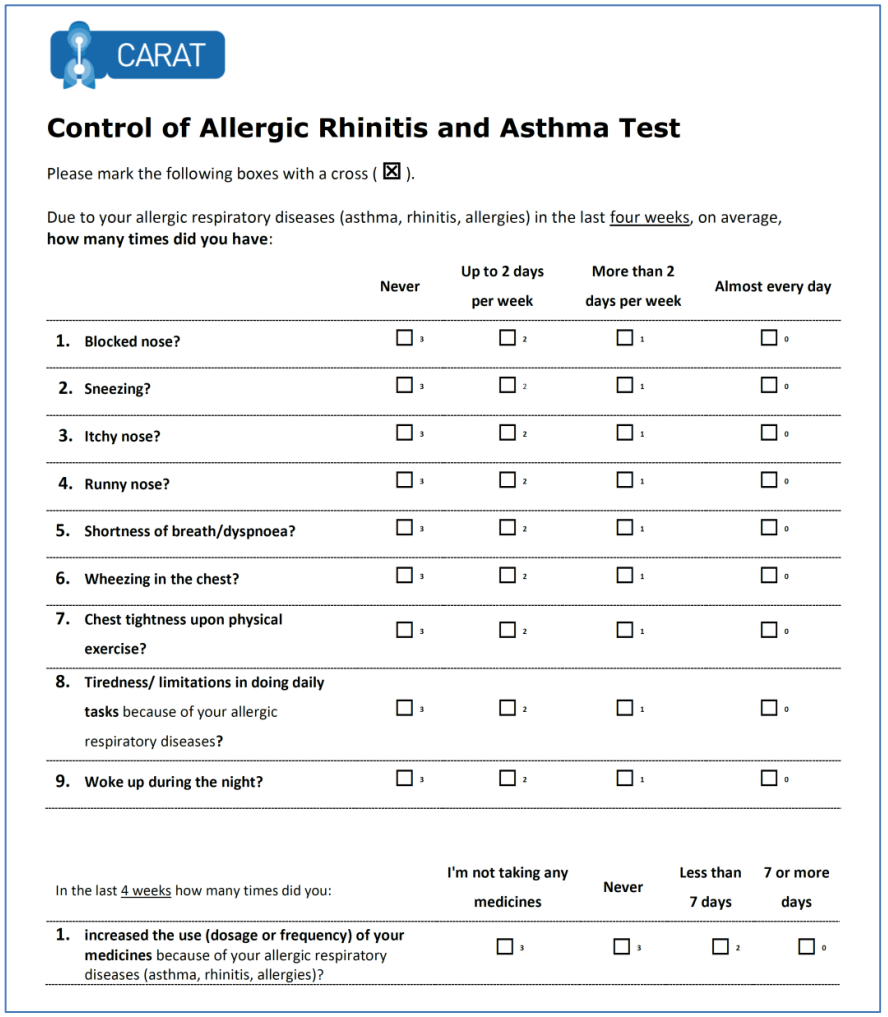
A **chest X-ray** should **not be routine** in the assessment of asthma and it is not expected to provide any additional information for the clinical management of Jane's asthma

What other clinical assessments do you think Jane needs?

- Jane was prescribed a treatment, which she failed to use for fear of side effects
- Adherence to medication is a modifiable behaviour that can be improved by having a clear understanding of the patient's perspective and the reasons for non-adherence
- If interventions are used to improve adherence, PCPs should identify Jane's perceptual and practical barriers so that interventions can be individually tailored

What other clinical assessments do you think Jane needs?

- Check asthma **symptoms** in the past **4 weeks**
- Determine if the patient has **risk factors** for **poor outcomes**
- Understand the **patient's perspective** on using inhalers



CARAT

Control of Allergic Rhinitis and Asthma Test

Please mark the following boxes with a cross (☒).

Due to your allergic respiratory diseases (asthma, rhinitis, allergies) in the last four weeks, on average, **how many times did you have**:

	Never	Up to 2 days per week	More than 2 days per week	Almost every day
1. **Blocked nose?**	☐ 3	☐ 2	☐ 1	☐ 0
2. **Sneezing?**	☐ 3	☐ 2	☐ 1	☐ 0
3. **Itchy nose?**	☐ 3	☐ 2	☐ 1	☐ 0
4. **Runny nose?**	☐ 3	☐ 2	☐ 1	☐ 0
5. **Shortness of breath/dyspnoea?**	☐ 3	☐ 2	☐ 1	☐ 0
6. **Wheezing in the chest?**	☐ 3	☐ 2	☐ 1	☐ 0
7. **Chest tightness upon physical exercise?**	☐ 3	☐ 2	☐ 1	☐ 0
8. **Tiredness/ limitations in doing daily tasks** because of your allergic respiratory diseases**?**	☐ 3	☐ 2	☐ 1	☐ 0
9. **Woke up during the night?**	☐ 3	☐ 2	☐ 1	☐ 0

In the last 4 weeks how many times did you:	I'm not taking any medicines	Never	Less than 7 days	7 or more days
1. **increased the use (dosage or frequency) of your medicines** because of your allergic respiratory diseases (asthma, rhinitis, allergies)?	☐ 3	☐ 3	☐ 2	☐ 0

I am ready to make a decision

- Low-dose ICS with as-needed SABA, OR ICS-Formoterol as needed

- **GINA Step 2**, should be considered as a possible option; however, Jane has troublesome day-time asthma symptoms and is waking at night due to asthma

- **Starting at a higher step (Step 3).** Step 3 treatments should be considered as a first option
  - Low dose ICS-LABA for maintenance + as-needed low dose ICS-formoterol
  - Medium dose ICS, **or** low dose ICS+LTRA + as-needed low dose ICS-formoterol
  - ICS-formoterol for maintenance and relief

- GINA advises to review the response to treatment after 2–3 months, adjust treatment and consider stepping down when asthma has been well controlled for 3 months

Treating a difficult-to-manage asthma patient

Smoking
- Ask about current smoking habits and exposure to second-hand smoke. People may be more willing to be honest about their smoking in a written self-completed questionnaire.
- Encourage and support smokers to quit, including medication and referral to expert stop-smoking services.
- Consider alternative therapy to ICS in patients who cannot quit because smokers respond less well to ICS than non-smokers.

Support
- Check what support the patient has from their family and involve the family where possible in supporting the patient's understanding of asthma and their adherence to treatment.

Education
- Check patient understands their asthma: what it is, why treatment helps.

Lifestyle

Ask patients specific questions about their exposure to factors that may worsen their asthma such as exposure to pets or occupational exposure:
- Where do you live?
- Is your house damp – does mould grow on any of the walls?
- Have you noticed anything in the environment (outside or in the home) that makes your asthma worse?
- What hobbies do you take part in?
- Have you noticed a pattern before your asthma gets worse?
- Does your asthma get better or worse at the weekends – or stay the same?

For difficult to manage asthma patients, use 'SIMPLES'

Smoking
Inhaler technique
Monitoring
Pharmacotherapy
Lifestyle
Education
Support

Inhaler technique
- Does the patient have the best choice of inhaler for their needs?
- Observe the patient using their inhaler(s) to ensure correct technique.
- Recheck inhaler technique on each visit.

Monitoring
- Assess asthma control in a systematic way using a simple, validated tool, such as the RCP 3 questions for assessing asthma control, ACT or CARAT.

Pharmacotherapy
- Is the patient being treated at the right step for the severity of their asthma?
- Check for both unintentional and intentional non-adherence by asking the patient about how they take their medication and by checking prescription records for their asthma medication (where this information is available) for the last 6 months, at every visit.
- Check the patient understands their treatment, tailoring information to their specific needs: what it is, what it is for, how it works, potential side effects and how to minimise them.

ACT = assessment of asthma control; CARAT = Control of Allergic Rhinitis and Asthma Test; ICS = inhaled corticosteroids; RCP = royal college of physicians.

SIMPLES IPCRG desktop helper. Available at: http://www.theipcrg.org/display/TreatP/Home+-+Difficult+to+manage+asthma (accessed July 2016)

How to manage adherence?

A patient's adherence to their medication is often determined by the following:

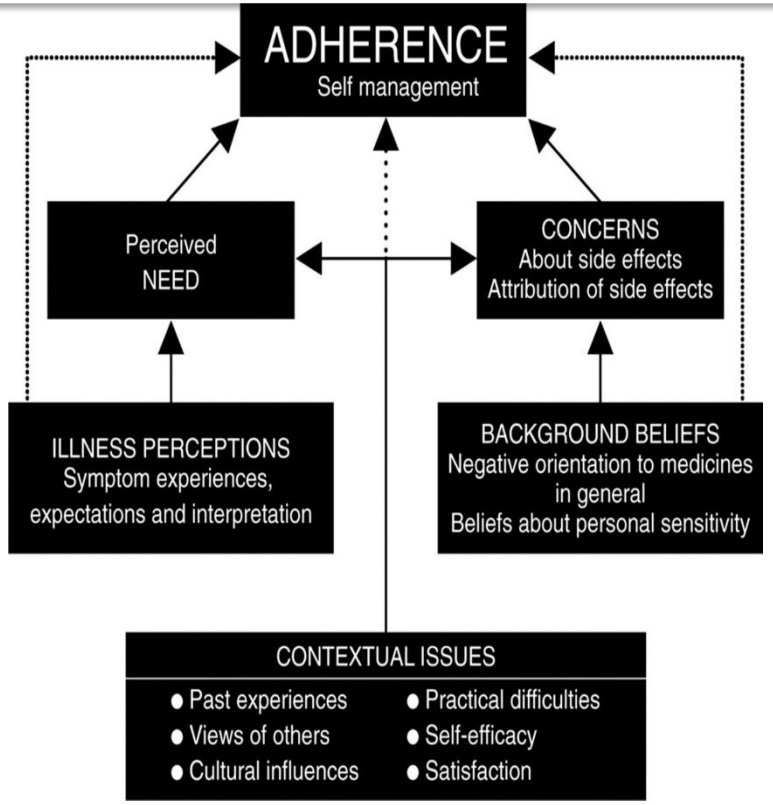
- The patient's perceptions of illness: expectations, aspirations and goals
- The patient's beliefs and concerns about treatments and cultural perceptions of asthma
- The perceived need and the level of control that patients want to achieve
- Contextual issues: past experiences, influences from others, practical difficulties

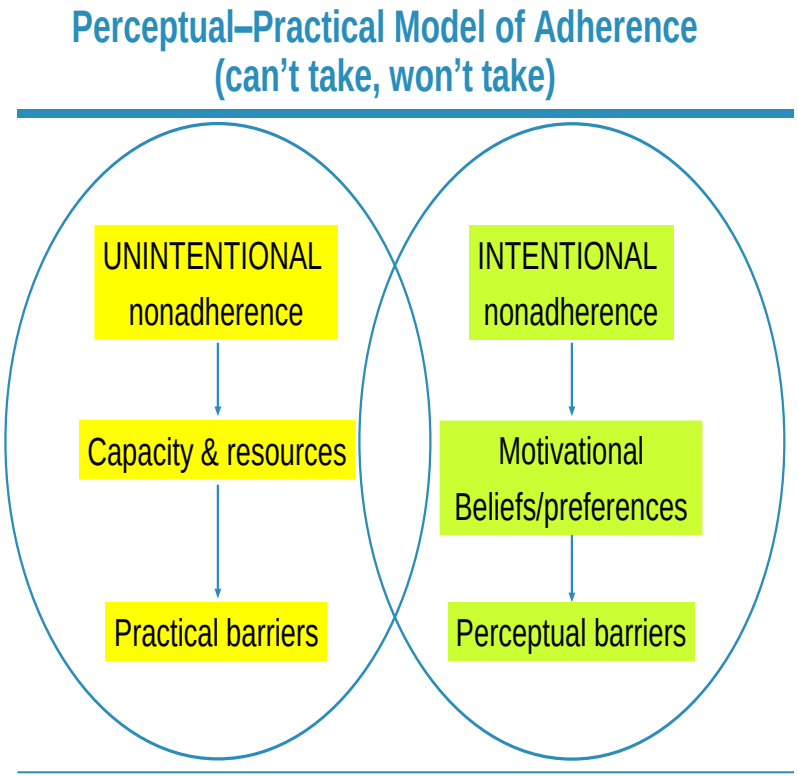
Horne R, et al. BMC Pulmonary Medicine 2007;7:8.

Patient adherence to medication

Patient adherence to medication is influenced by a number of factors relating to how the individual judges the necessity of their treatment relative to their concerns[1]

Intentional non-adherence derives from the balance between the patient's beliefs about the personal necessity of taking a given medication relative to any concerns about taking it[2]

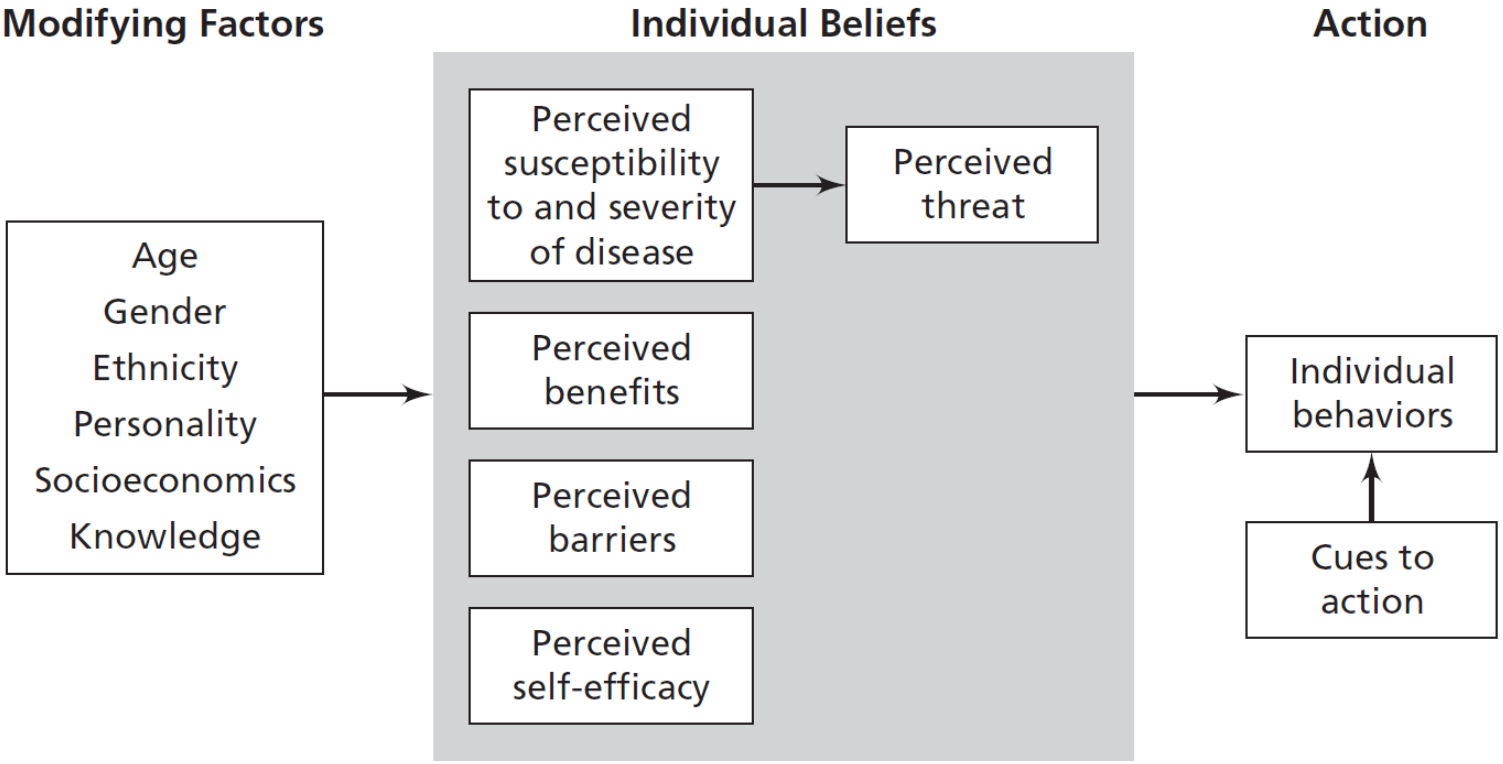




1. Horne R. Chest. 2006;130:65S-72S. 2006 by American College of Chest Physicians; 2. Horne R et al. National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO). 2005. Available at: http://www.nets.nihr.ac.uk/__data/assets/pdf_file/0009/64494/FR-08-1412-076.pdf (accessed Jul 2016).

Health Belief Model Components and Linkages

The Health Belief Model by Rosenstock, is a psychological model developed in the 1950s. It contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions



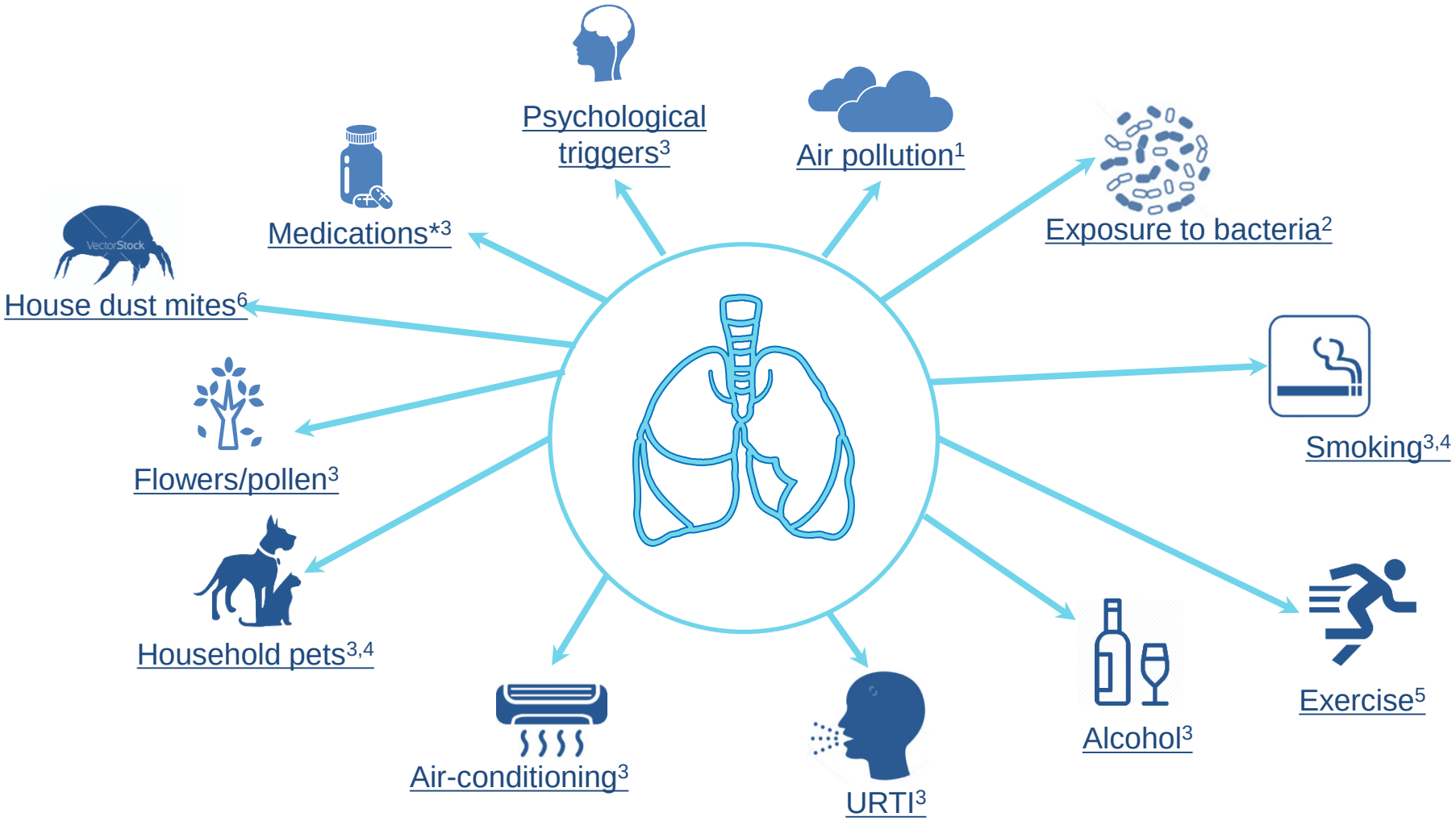
Glanz K et al. The Health Belief Model. In Health Behaviour and Health Education, 2008; pp.45–67. Published by Jossey-Bass A Wiley Imprint, CA, USA.

I am ready to make a decision
Review treatment options

- Together with non-pharmacological approaches, the recommended options for pharmacotherapy for Jane are:
  - Combination **low-dose ICS/LABA** with **as-needed SABA**
  - Combination **low-dose ICS/formoterol maintenance and reliever regimen**

ICS = inhaled corticosteroid; LABA = long-acting β_2 agonist; SABA = short-acting β_2 agonist.

Key asthma triggers



URTI = upper respiratory tract infection

*Beta-blockers and non-steroidal anti-inflammatory drugs.

1. Esposito S, et al. BMC Pulm Med 2014;14:130; 2. Beigelman A, et al. Curr Opin Allergy Clin Immunol 2014;14:137–142; 3. See K, et al. Singapore Med J 2015 epub; 4. Vernon M, et al. J Asthma 2012;49:991–998; 5. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016. Available from: www.ginasthma.org; 6. Lim FL, et al. PLoS One 2015;10:e0124905.

Common asthma symptoms

Inflammation and remodelling[1–4]

- Symptoms associated with variable expiratory airflow and inflammation, which subsequently lead to:
  - Bronchoconstriction (airway narrowing)
  - Airway wall thickening
  - Increased mucus

Common symptoms[5]

- Chest tightness
- Breathlessness
- Wheezing
- Cough

Common physical examination findings[5,6]

- Breathlessness
- Tachycardia
- Audible wheezing
- Atopic findings, e.g. rhinitis, eczema
- Symptoms often worse at night or in the morning when waking

1. Kistemaker LE, et al. Trends Pharmacol Sci 2015;36:164–171; 2. Kistemaker LE, et al. Life Sci 2012;91:1126–1133; 3. Gosens R, et al. Respir Res 2006;7:73; 4. Jeffery PK. Proc Am Thorac Soc 2004;1:176–183; 5. Patadia M, et al. Otolaryngol Clin North Am 2014;47:23–32; 6. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016. Available from: www.ginasthma.org.

The goal of asthma management is to achieve overall asthma control and reduce future risks

The long-term goals of asthma management

Symptom control

To achieve good control of symptoms and maintain normal activity levels

Risk reduction

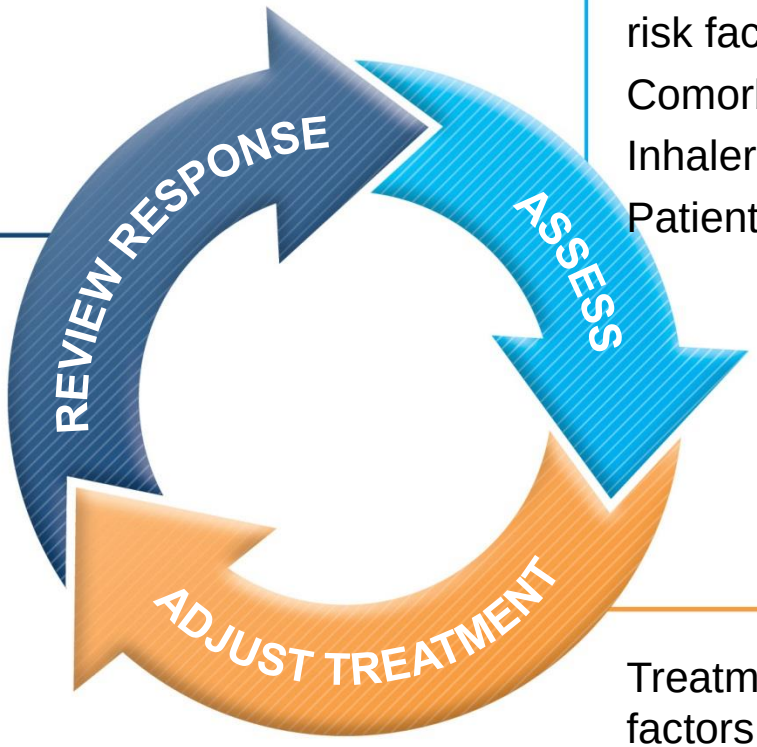
To minimise future risk of exacerbations, fixed airflow limitation and medication side effects

Achieving these goals requires a partnership between patients and their healthcare providers

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016. Available from: www.ginasthma.org.

Asthma management is a continuous control-based process

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient goals



Symptoms
Exacerbations Side-effects
Lung function
Patient satisfaction

Treatment of modifiable risk factors & comorbidities
Non-pharmacological strategies
Education & skills training
Asthma medications

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2019. Available from: www.ginasthma.org.

GINA assessment of symptom control

A. Symptom control

In the past 4 weeks, has the patient had:	Well controlled	Partly controlled	Uncontrolled
• Daytime asthma symptoms more often than twice a week? Yes❑ No❑	None of these	1–2 of these	3–4 of these
• Any night waking due to asthma? Yes❑ No❑			
• Reliever needed for symptoms* more often than twice a week? Yes❑ No❑			
• Any activity limitation due to asthma? Yes❑ No❑			

*Excludes reliever taken before exercise.
FEV_1 = forced expiratory volume in 1 second.

Use an asthma control test – CARAT, ACT or other

CARAT

Control of Allergic Rhinitis and Asthma Test

Please mark the following boxes with a cross (☒).

Due to your allergic respiratory diseases (asthma, rhinitis, allergies) in the last four weeks, on average, **how many times did you have**:

	Never	Up to 2 days per week	More than 2 days per week	Almost every day
1. Blocked nose?	☐ 3	☐ 2	☐ 1	☐ 0
2. Sneezing?	☐ 3	☐ 2	☐ 1	☐ 0
3. Itchy nose?	☐ 3	☐ 2	☐ 1	☐ 0
4. Runny nose?	☐ 3	☐ 2	☐ 1	☐ 0
5. Shortness of breath/dyspnoea?	☐ 3	☐ 2	☐ 1	☐ 0
6. Wheezing in the chest?	☐ 3	☐ 2	☐ 1	☐ 0
7. Chest tightness upon physical exercise?	☐ 3	☐ 2	☐ 1	☐ 0
8. Tiredness/ limitations in doing daily tasks because of your allergic respiratory diseases**?**	☐ 3	☐ 2	☐ 1	☐ 0
9. Woke up during the night?	☐ 3	☐ 2	☐ 1	☐ 0

In the last 4 weeks how many times did you:	I'm not taking any medicines	Never	Less than 7 days	7 or more days
1. increased the use (dosage or frequency) of your medicines because of your allergic respiratory diseases (asthma, rhinitis, allergies)?	☐ 3	☐ 3	☐ 2	☐ 0

www.new.caratnetwork.org/pt-pt/

CARAT
Fonseca JA, Nogueira-Silva L, Morais-Almeida M, Azevedo L, Sa-Sousa A, Branco-Ferreira M, Fernandes L, Bousquet J. Validation of a questionnaire (CARAT10) to assess rhinitis and asthma in patients with asthma. Allergy. 2010 Aug;65(8):1042-8. doi: 10.1111/j.1398-9995.2009.02310.x. Epub 2010 Feb 1.

Written PAAP

Written PAAP

- A written PAAP is an essential part of managing long-term disease[1]
- SIGN-BTS recommend that ***all people with asthma should be offered self-management education which includes a written AAP***[2]
- In addition, GINA also highlights the importance of supporting long-term asthma management[3]
- These recommendations are based on literature reviews that show that supported PAAPs improve asthma control, reduce exacerbations and improve quality of life[2,3]

Why are they useful?

- Pinpoint signs that the asthma is getting worse[4]
- Keep track of when to take medicines[4]
- Aid daily monitoring as well as long-term control[4]
- Provide information on what to do in the event of an asthma attack[4]

The overall aim of a written PAAP is to help take *early action* to prevent or reduce the severity of asthma attack symptoms[4]

PAAP = personalised asthma action plan; GINA = Global Initiative for Asthma; SIGN-BTS = Scottish Intercollegiate Guidelines Network- British Thoracic Society.

1. Gibson PG, et al. Thorax 2004;59:94–99; 2. SIGN-BTS. British guideline on the management of asthma. Consultation 2018; 3. GINA Strategy for asthma management and prevention 2016; 4. Pinnock H. Breathe 2015;11:98–109.

Comorbidities can impact asthma management

Asthma Comorbidities

- Rhinitis and chronic rhinosinusitis
- Gastroesophageal reflux (GERD),
- Obesity,
- Obstructive sleep apnoea,
- Depression and anxiety.

Comorbidities should be identified as they may contribute to respiratory symptoms, flare-ups and poor quality of life.
Their treatment may
complicate asthma management.

Treatments for asthma: non-pharmacological approaches

There are many non-pharmacological approaches to attaining better asthma control; some of these include:

Allergen avoidance

Smoking cessation or avoidance of tobacco smoke

Physical activity

Checks of inhaler technique

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016. Available from: www.ginasthma.org.

Initial controller treatment for adults, adolescents and children (6–11 years)

- Start controller treatment early
  - For best outcomes, initiate controller treatment as early as possible after making the diagnosis of asthma
- Step 1 is for patients with symptoms less than twice a month, and with no exacerbation risk factors
- GINA recommends as-needed low dose ICS-formoterol (off-label; *all evidence with budesonide-formoterol*) for almost all patients
- Treatment of children 6-11 years: **Low dose ICS taken whenever SABA is taken** *(off-label)*
- Consider starting at a **higher step** if:
  - Troublesome asthma symptoms on most days
  - Waking from asthma once or more a week, especially if any risk factors for exacerbations
- If initial asthma presentation is with an exacerbation:
  - Give a short course of oral steroids and start regular controller treatment (e.g. high-dose ICS or medium-dose ICS/LABA, then step down)

ICS = inhaled corticosteroid; LABA = long-acting β_2 agonist.

GINA 2019

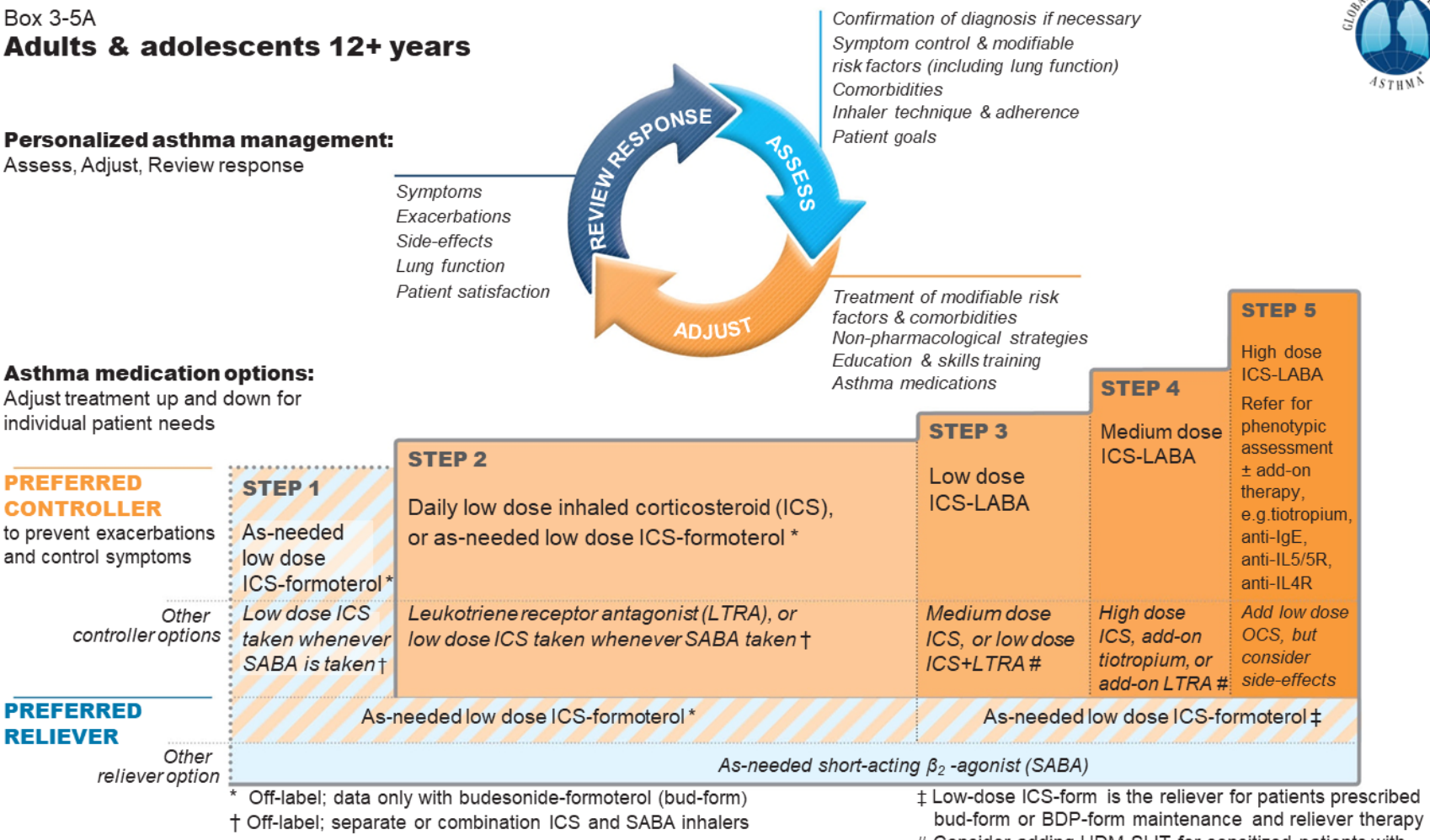
Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018 and 2019. Available from: www.ginasthma.org.

Initial controller treatment for adults, adolescents and children (6–11 years)

- Before starting initial controller treatment
  - Record evidence for diagnosis of asthma, if possible
  - Record symptom control and risk factors, including lung function
  - Consider factors affecting choice of treatment for this patient
  - Ensure that the patient can use the inhaler correctly
  - Schedule an appointment for a follow-up visit
- After starting initial controller treatment
  - Review response after 2–3 months, or according to clinical urgency
  - Adjust treatment (including non-pharmacological treatments)
  - Consider stepping down when asthma has been well controlled for 3 months

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018.
Available from: www.ginasthma.org.

GINA recommends a stepwise approach to pharmacological asthma management

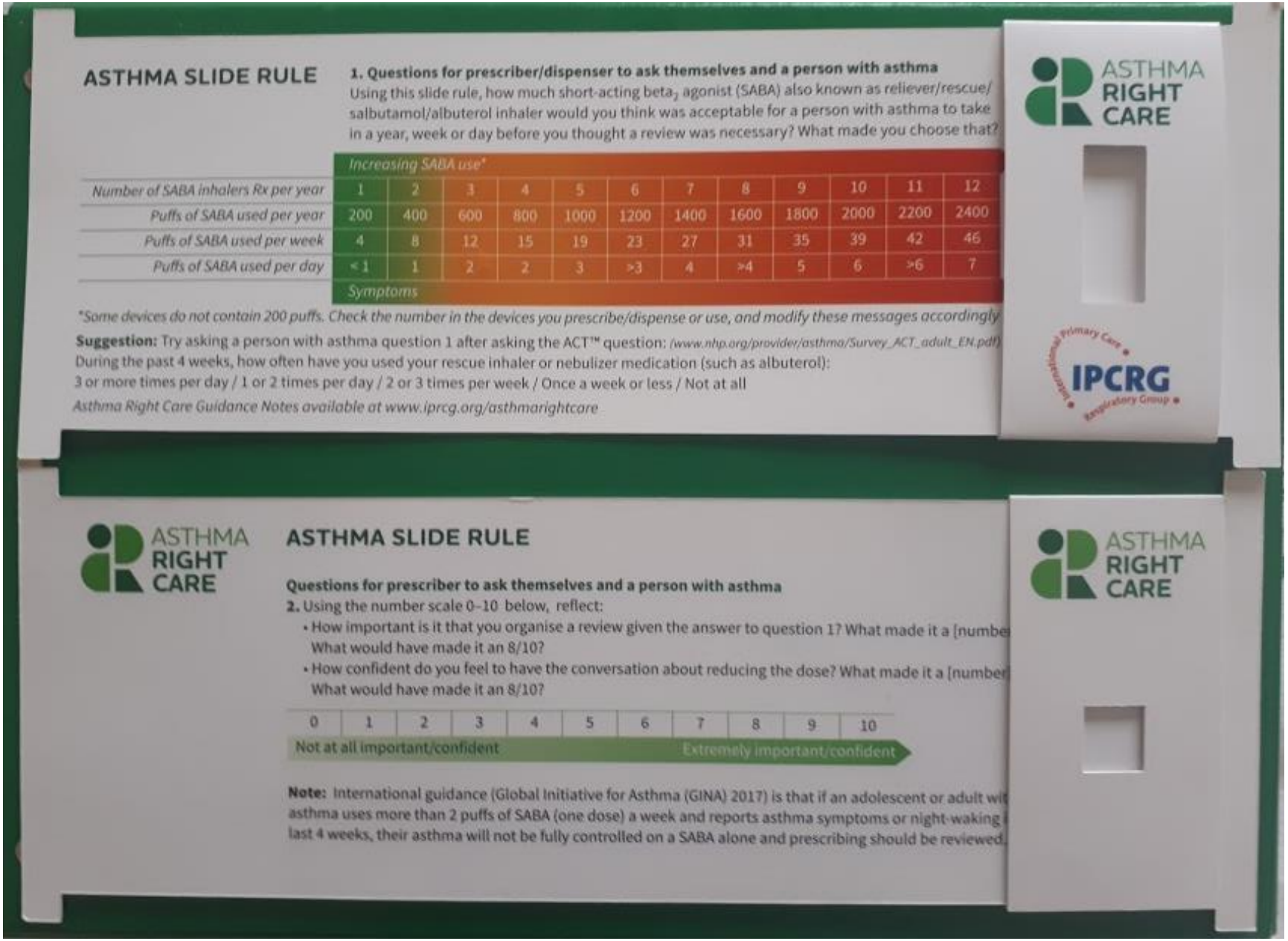


Step 3 - one or two controllers plus as-needed reliever

- Before considering step-up
  - Check inhaler technique and adherence, confirm diagnosis
- Adults/adolescents: preferred options are either combination low-dose ICS/LABA maintenance with as-needed **SABA** or **ICS/formoterol or**, OR
- Combination **low-dose ICS/formoterol maintenance and reliever regimen***
  - Adding LABA reduces symptoms and exacerbations and increases FEV1, while allowing lower dose of ICS
  - In at-risk patients, maintenance and reliever regimen significantly reduces exacerbations with similar level of symptom control and lower ICS doses compared with other regimens
- Children 6–11 years: preferred option is **low dose ICS-LABA** and medium dose ICS are 'preferred' controller treatments
  - No safety signal with ICS-LABA in children 4-11 years

ICS = inhaled corticosteroid; LABA = long-acting β_2 agonist; SABA = short-acting β_2 agonist; LTRA = leukotriene receptor antagonist.

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018.
Available from: www.ginasthma.org.



ASTHMA SLIDE RULE

1. Questions for prescriber/dispenser to ask themselves and a person with asthma

Using this slide rule, how much short-acting beta$_2$ agonist (SABA) also known as reliever/rescue/salbutamol/albuterol inhaler would you think was acceptable for a person with asthma to take in a year, week or day before you thought a review was necessary? What made you choose that?

*Increasing SABA use**

Number of SABA inhalers Rx per year	1	2	3	4	5	6	7	8	9	10	11	12
Puffs of SABA used per year	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400
Puffs of SABA used per week	4	8	12	15	19	23	27	31	35	39	42	46
Puffs of SABA used per day	<1	1	2	2	3	>3	4	>4	5	6	>6	7

Symptoms

**Some devices do not contain 200 puffs. Check the number in the devices you prescribe/dispense or use, and modify these messages accordingly*

Suggestion: Try asking a person with asthma question 1 after asking the ACT™ question: *(www.nhp.org/provider/asthma/Survey_ACT_adult_EN.pdf)*
During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol):
3 or more times per day / 1 or 2 times per day / 2 or 3 times per week / Once a week or less / Not at all

Asthma Right Care Guidance Notes available at www.iprcg.org/asthmarightcare

ASTHMA RIGHT CARE

International Primary Care Respiratory Group IPCRG

ASTHMA RIGHT CARE

ASTHMA SLIDE RULE

Questions for prescriber to ask themselves and a person with asthma

2. Using the number scale 0–10 below, reflect:

- How important is it that you organise a review given the answer to question 1? What made it a [numbe
  What would have made it an 8/10?
- How confident do you feel to have the conversation about reducing the dose? What made it a [number
  What would have made it an 8/10?

0	1	2	3	4	5	6	7	8	9	10

Not at all important/confident → Extremely important/confident

Note: International guidance (Global Initiative for Asthma (GINA) 2017) is that if an adolescent or adult wit
asthma uses more than 2 puffs of SABA (one dose) a week and reports asthma symptoms or night-waking
last 4 weeks, their asthma will not be fully controlled on a SABA alone and prescribing should be reviewed.

ASTHMA RIGHT CARE

Thank you for your attention!

References

- Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention. 2018 Update. https://ginasthma.org/
- O'Byrne PM, Jenkins C, Bateman ED. The paradoxes of asthma management: time for a new approach? Eur Respir J. 2017 Sep 9;50(3). pii: 1701103. doi: 10.1183/13993003.01103-2017. Print 2017 Sep.
- Bateman ED, Reddel HK, O'Byrne PM, Barnes PJ, Zhong N, Keen C, Jorup C, Lamarca R, Siwek-Posluszna A, FitzGerald JM. As-Needed Budesonide-Formoterol versus Maintenance Budesonide in Mild Asthma. N Engl J Med. 2018 May 17;378(20):1877-1887. doi: 10.1056/NEJMoa1715275.
- O'Byrne PM, FitzGerald JM, Bateman ED, Barnes PJ, Zhong N, Keen C, Jorup C, Lamarca R, Ivanov S, Reddel HK. Inhaled Combined Budesonide-Formoterol as Needed in Mild Asthma. N Engl J Med. 2018 May 17;378(20):1865-1876. doi: 10.1056/NEJMoa1715274.

PAAP

This is what I need to do to stay on top of my asthma:

My personal best peak flow is: ____

My preventer inhaler (insert name/colour): ____

I need to take my preventer inhaler every day even when I feel well

I take ____ puff(s) in the morning
and ____ puff(s) at night.

My reliever inhaler (insert name/colour): ____

I take my reliever inhaler only if I need to

I take ____ puff(s) of my reliever inhaler if any of these things happen:

- I'm wheezing
- My chest feels tight
- I'm finding it hard to breathe
- I'm coughing.

Other medicines I take for my asthma every day:

____

With this daily routine I should expect/aim to have no symptoms. If I haven't had any symptoms or needed my reliever inhaler for at least 12 weeks, ask my GP or asthma nurse to review my medicines in case they can reduce the dose.

People with allergies need to be extra careful as attacks can be more severe.

My asthma is getting worse if I notice any of these:

- **My symptoms are coming back (wheeze, tightness in my chest, feeling breathless, cough)**
- **I am waking up at night**
- **My symptoms are interfering with my usual day-to-day activities (eg at work, exercising)**
- **I am using my reliever inhaler ____ times a week or more**
- **My peak flow drops to below ____**

This is what I can do straight away to get on top of my asthma:

1 If I haven't been using my preventer inhaler, start using it regularly again or:

Increase my preventer inhaler dose to ____ **puffs** ____ **times a day until my symptoms have gone and my peak flow is back to normal**

Take my reliever inhaler as needed (up to ____ puffs every four hours)

If I don't improve within 48 hours make an urgent appointment to see my GP or asthma nurse.

2 If I have been given prednisolone tablets (steroid tablets) to keep at home:

Take ____ mg of prednisolone tablets (which is ____ x 5mg) **immediately** and again every morning for ____ days or until I am fully better.

URGENT! Call my GP or asthma nurse today and let them know I have started taking steroids and make an appointment to be seen within 24 hours.

I'm having an asthma attack if any of these happen:

- **My reliever inhaler is not helping or I need it more than every ____ hours**
- **I find it difficult to walk or talk**
- **I find it difficult to breathe**
- **I'm wheezing a lot or I have a very tight chest or I'm coughing a lot**
- **My peak flow is below ____**

THIS IS AN EMERGENCY TAKE ACTION NOW

1. Sit up straight – don't lie down. Try to keep calm
2. Take one puff of my reliever inhaler every 30 to 60 seconds up to a maximum of 10 puffs
3. A) If I feel worse at any point while I'm using my inhaler → CALL 999
   B) If I don't feel any better after 10 puffs → CALL 999
   C) If I feel better: make an urgent same-day appointment with my GP or asthma nurse to get advice

CALL 999 → Ambulance taking longer than 15 minutes? Repeat step 2

If I feel better, and have made my urgent same-day appointment:
- Check if I've been given rescue prednisolone tablets
- If I have these I should take them as prescribed by my doctor or asthma nurse

IMPORTANT! This asthma attack information is not designed for people who use the Symbicort® SMART regime OR Fostair® MART regime. If you use one of these speak to your GP or asthma nurse to get the correct asthma attack information.

Use an asthma control test – ACT (Asthma Control Test)

						SCORE
1. In the past **4 weeks**, how much of the time did your **asthma** keep you from getting as much done at work, school or at home?	All of the time 1	Most of the time 2	Some of the time 3	A little of the time 4	None of the time 5	
2. During the past **4 weeks**, how often have you had shortness of breath?	More than once a day 1	Once a day 2	3 to 6 times a week 3	Once or twice a week 4	Not at all 5	
3. During the past **4 weeks**, how often did your **asthma** symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?	4 or more nights a week 1	2 or 3 nights a week 2	Once a week 3	Once or twice 4	Not at all 5	
4. During the past **4 weeks**, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?	3 or more times per day 1	1 or 2 times per day 2	2 or 3 times per week 3	Once a week or less 4	Not at all 5	
5. How would you rate your **asthma** control during the **past 4 weeks**?	Not controlled at all 1	Poorly controlled 2	Somewhat controlled 3	Well controlled 4	Completely controlled 5	

ACT
Nguyen VN, Chavannes N, Le LT, Price D. The Asthma Control Test (ACT) as an alternative tool to Global Initiative for Asthma (GINA) guideline criteria for assessing asthma control in Vietnamese outpatients. Prim Care Respir J. 2012 Mar;21(1):85-9. doi: 10.4104/pcrj.2011.00093.