COPD and asthma – an update for primary care providers

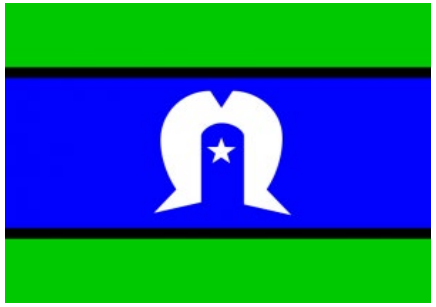
Wednesday 11th June 2025

The content in this session is valid at date of presentation

Acknowledgement of Country

North Western Melbourne Primary Health Network would like to acknowledge the Traditional Custodians of the land on which our work takes place, The Wurundjeri Woi Wurrung People, The Boon Wurrung People and The Wathaurong People.

We pay respects to Elders past, present and emerging as well as pay respects to any Aboriginal and Torres Strait Islander people in the session with us today.



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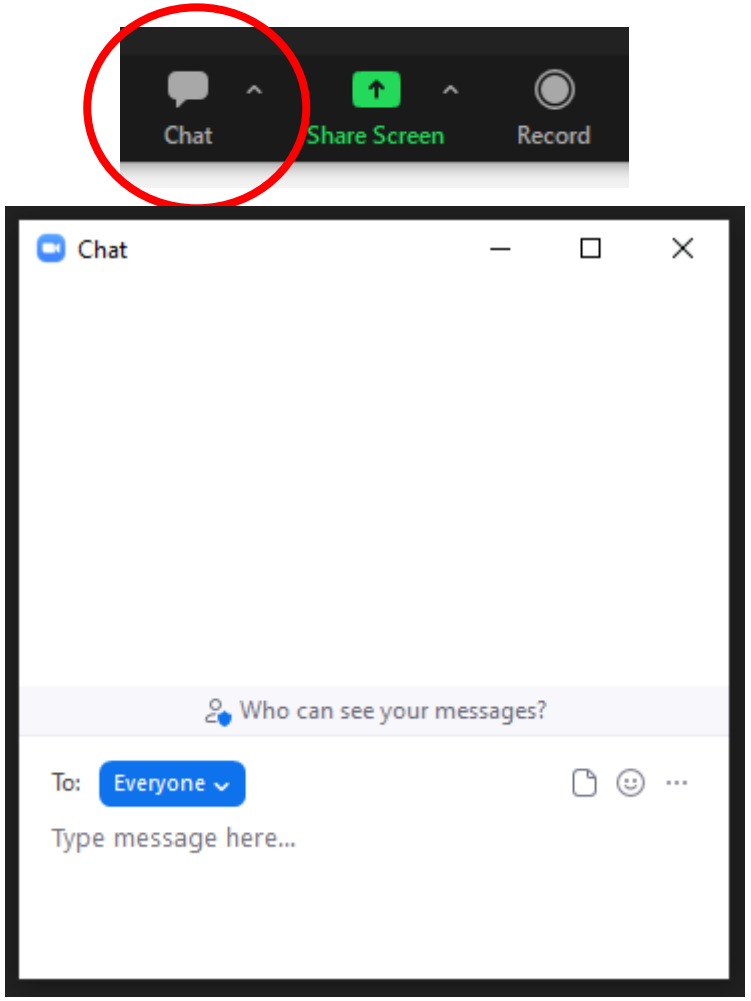

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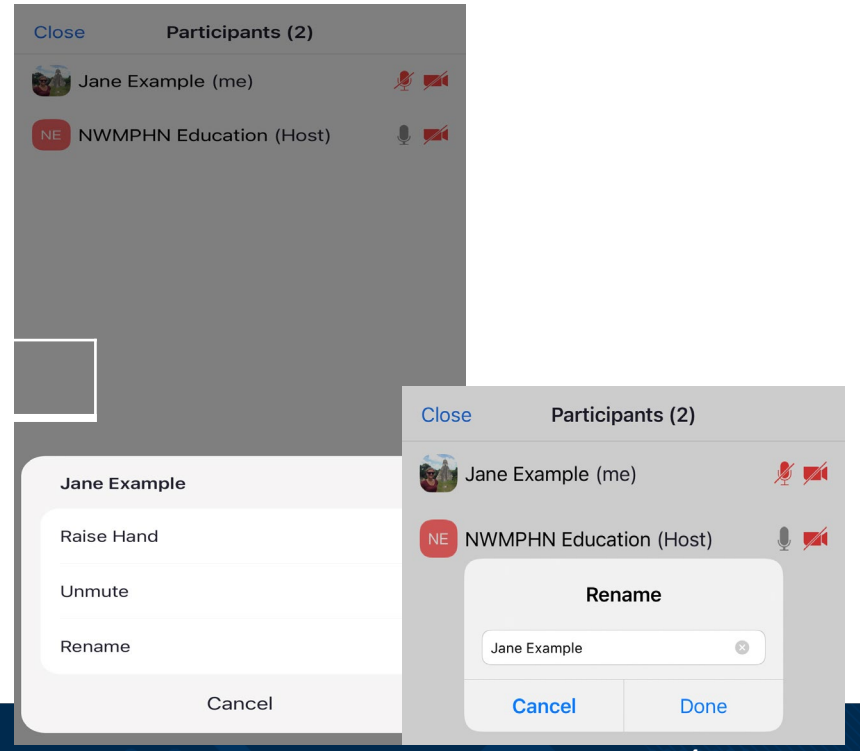

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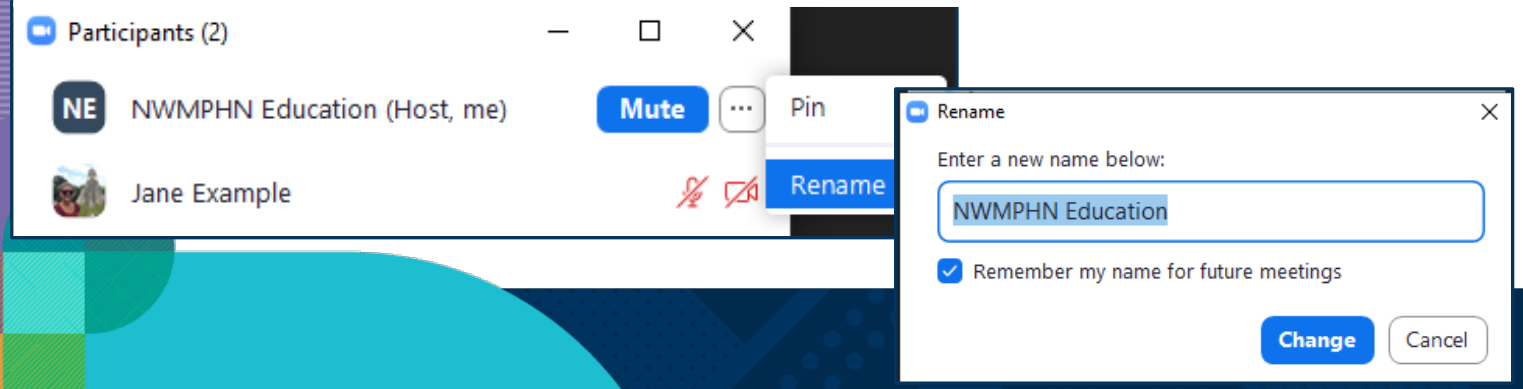

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HealthPathways Melbourne

COPD and asthma – an update for primary care providers

11 June 2025

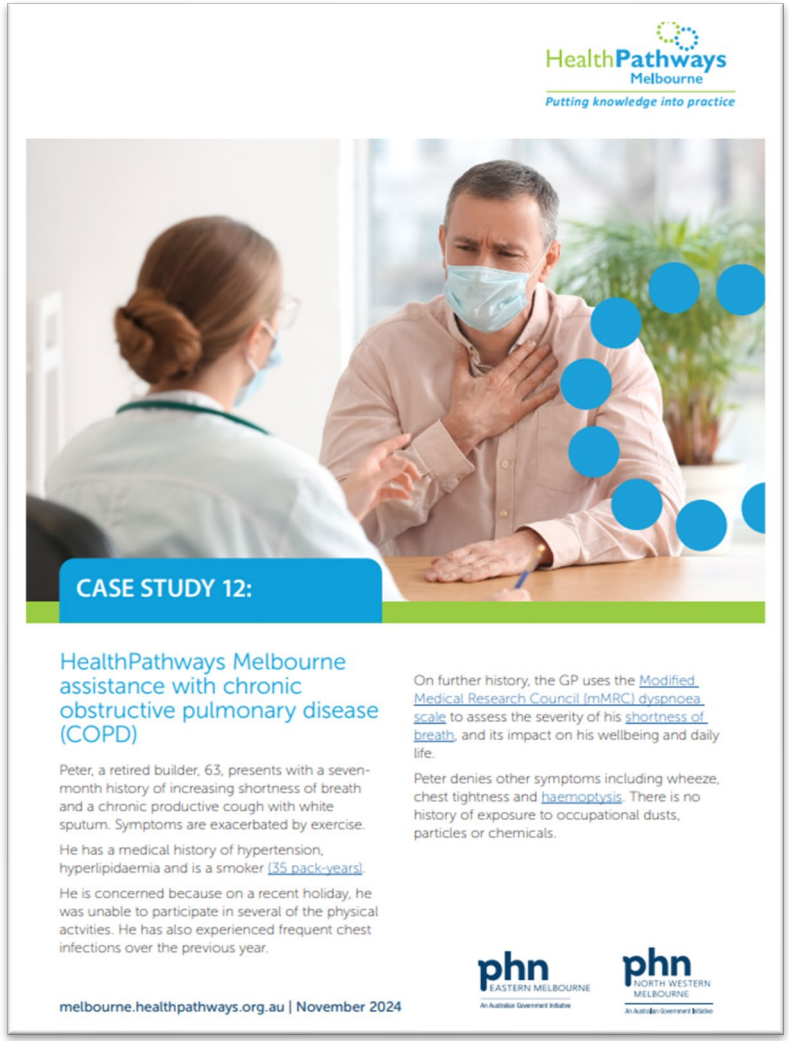
Pathways are written by GP clinical editors with support from local GPs, hospital-based specialists and other subject matter experts

- clear and concise, evidence-based medical advice
- Reduce variation in care
- how to refer to the most appropriate hospital, community health service or allied health provider.
- what services are available to my patients

HealthPathways – COPD and Asthma

HealthPathways Case Study- COPD

Access the case study- Chronic obstructive pulmonary disease (COPD)


HealthPathways Melbourne
Putting knowledge into practice

CASE STUDY 12:

HealthPathways Melbourne assistance with chronic obstructive pulmonary disease (COPD)

Peter, a retired builder, 63, presents with a seven-month history of increasing shortness of breath and a chronic productive cough with white sputum. Symptoms are exacerbated by exercise.

He has a medical history of hypertension, hyperlipidaemia and is a smoker (35 pack-years).

He is concerned because on a recent holiday, he was unable to participate in several of the physical actvities. He has also experienced frequent chest infections over the previous year.

On further history, the GP uses the Modified Medical Research Council (mMRC) dyspnoea scale to assess the severity of his shortness of breath, and its impact on his wellbeing and daily life.

Peter denies other symptoms including wheeze, chest tightness and haemoptysis. There is no history of exposure to occupational dusts, particles or chemicals.

phn EASTERN MELBOURNE
phn NORTH WESTERN MELBOURNE

melbourne.healthpathways.org.au | November 2024

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Relevant and related pathways

Relevant pathways

Asthma in Adults
Asthma-COPD
COPD
Acute Exacerbation of COPD
Non-acute COPD
COPD Severity Classification
Advanced or End-stage COPD
Assessing Respiratory Presentations in General Practice
Acute Asthma in Children
Asthma in Adolescents (Aged 12 Years and Over)
Asthma in Primary School-aged Children (Aged 6 to 11 Years)
Wheeze and Asthma in Preschool Children (Aged 1 to 5 Years)
Asthma in Adults - Acute
Asthma in Adults - Non-acute
Asthma in Pregnancy
Thunderstorm Asthma

Related pathways

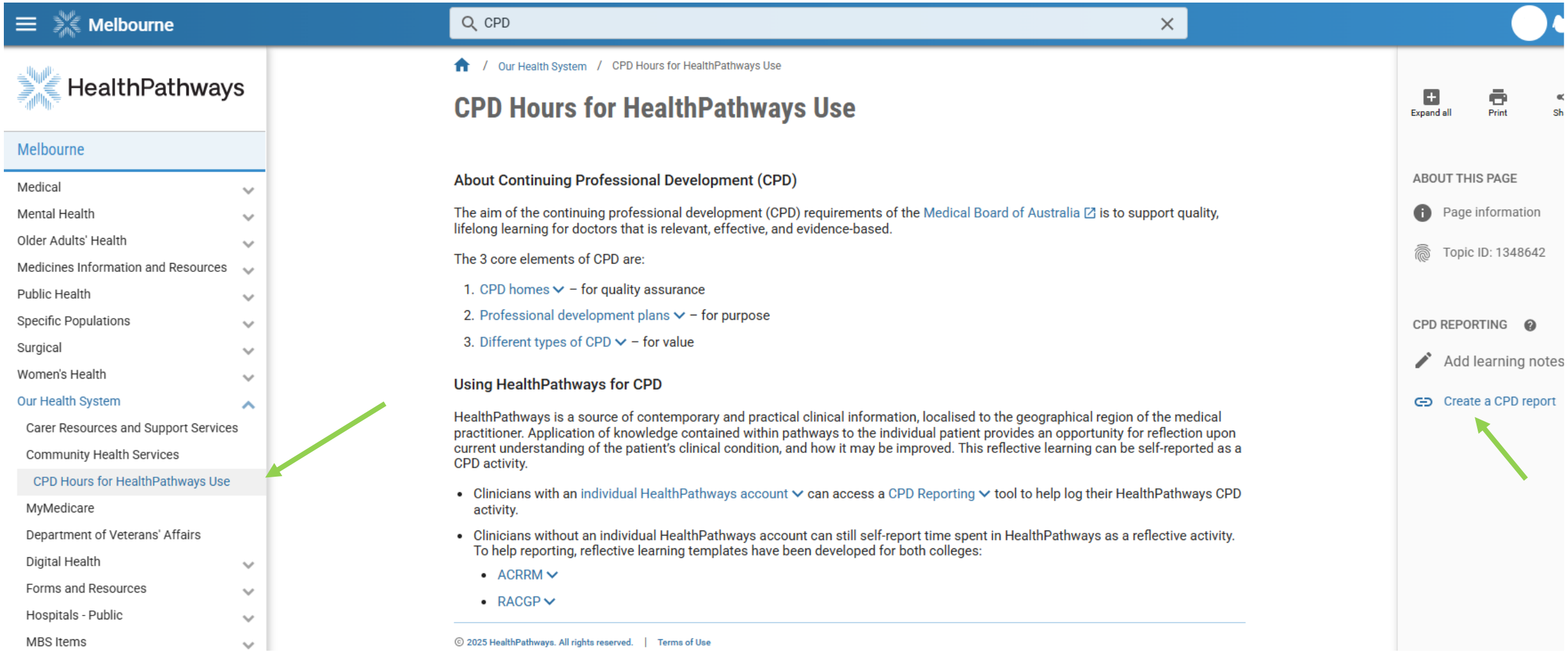
Bronchiectasis
Chronic Cough
Community Acquired Pneumonia (CAP) in Adults
Smoking and Vaping Cessation
Community Asthma Education and Support
Respiratory Infectious Diseases Practice Management

Referrals

Acute Respiratory Referral (Same-day)
Non-acute Respiratory Referral (> 24 hours)
Lung Function Testing
Pulmonary Rehabilitation
Home Oxygen Referral
Statewide referral criteria

CPD Hours for HealthPathways Use

HealthPathways – CPD Hours for HealthPathways Use



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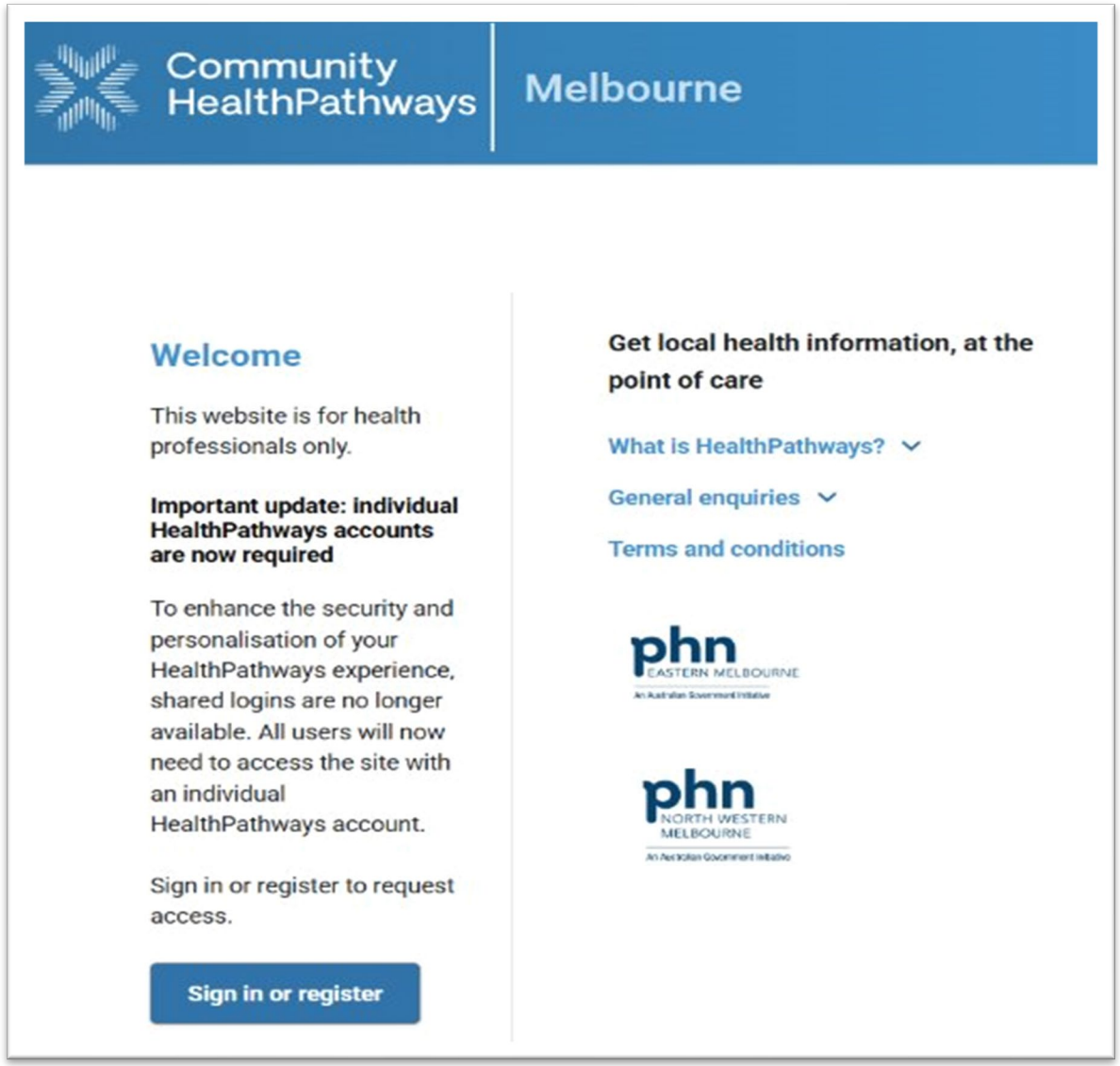


Speakers

A/Prof Anne Marie Southcott – respiratory and sleep physician

Western Health

A/Prof Anne Marie Southcott, is a respiratory and sleep physician who took up her position as Head of Unit, Respiratory and Sleep Disorders Medicine at Western Health in November 2009. Western Health provides respiratory and sleep medicine clinical services at several places, including Footscray and Sunshine Hospitals and Melton Health. Dr Southcott has a strong clinical interest in the broad range of respiratory illnesses and sleep disorders, and in standards for pulmonary function and sleep laboratories.

She has been involved in many clinical trials of asthma and COPD medications, is currently a member of the TSANZ Laboratory Accreditation and Quality committee, the NATA/ASA Sleep Accreditation Advisory Committee and Statewide Equipment Program Domiciliary Oxygen Program Clinical Advisory panel. She is also on the National Examining Panel for the RACP Adult Medicine specialist physician training program.

COPD and Asthma:
an update for Primary Care Providers

Anne Marie Southcott
Western Health

11th June 2025

Outline

- Definitions
- Guidelines
  - Changes in approach, new treatments
- Which patients may benefit from specialist assessment?
  - Assessment of disease control
  - Patients at risk of deterioration and harm
- Important comorbidities
  - General: bone health, comorbid respiratory conditions, psychoscocial
  - COPD: Cardiovascular, Lung cancer
- Discussion

Definitions of Asthma and COPD

Western Health

- Are labels helpful?
  - Eg Asthma vs COPD
  - Asthma and COPD
  - Airways disease with treatable traits
- How might labels impact our treatment approaches?

What is COPD?

A group of disorders

characterised by airway

inflammation and airflow

limitation that is not fully reversible

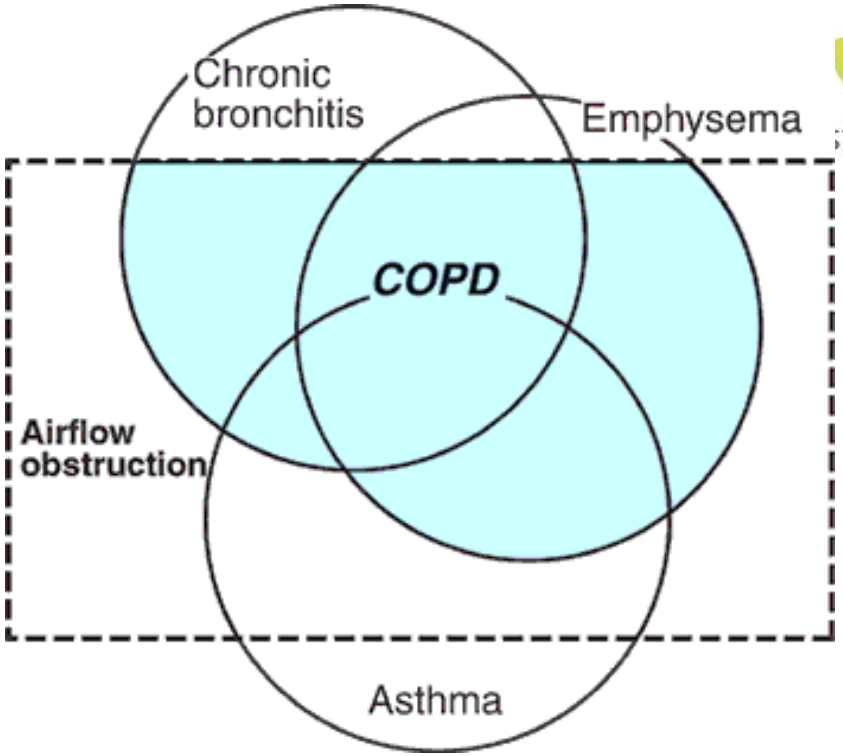
A progressive condition associated with an abnormal inflammatory and repair response to noxious stimuli

-small airway disease

-parenchymal destruction

both causing airflow limitation

(Fully reversible asthma is not COPD)



COPD = chronic obstructive pulmonary disease

COPD: Chronic obstructive pulmonary disease

Defined by the presence of obstruction on breathing test (spirometry)

Multiple causes and mechanisms of airflow obstruction (may coexist)

- Smoking related
  - Emphysema - loss of alveolar walls
  - Chronic bronchitis - chronic cough with mucus
- Asthma – reversible (at least in part)
- Bronchiectasis – dilatation of airway wall
- Rare conditions (LAM, HistiocytosisX)

Asthma
Definitions

GINA 2012

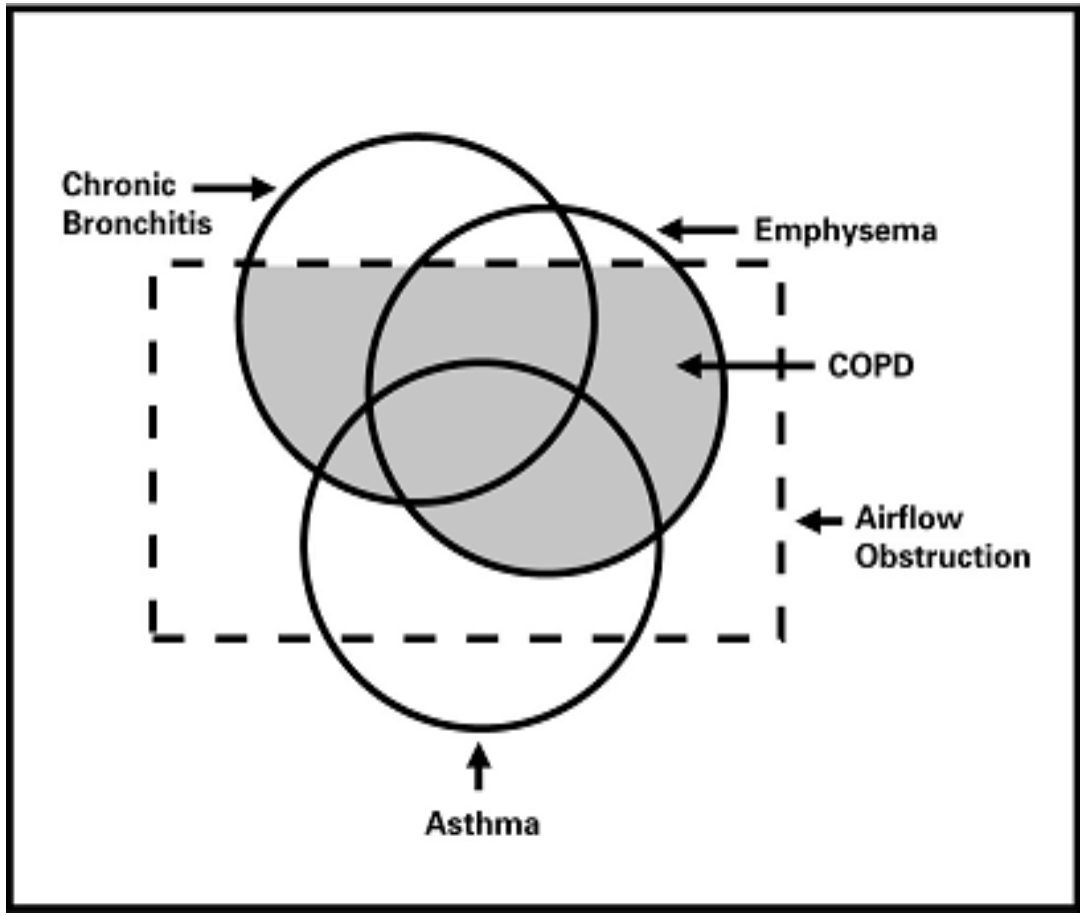
"Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular element play a role. The chronic inflammation is associated with airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and cough, particularly at night or early in the morning. The episodes are usually associated with widespread but ***variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment****."*

GINA 2014

"Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of **respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation".**

Overlap of Respiratory Symptoms

It may be impossible to differentiate between patients with asthma with some irreversible airflow obstruction, and between some patients with chronic bronchitis and emphysema who have partially reversible airflow obstruction



Clinical Features

COPD	Asthma
Progressive course	Variable course
Later onset of symptoms	Onset at young age
Usually moderately heavy smoking history	No association with smoking history
Airflow limitation not completely reversible	Airflow limitation substantially or completely reversible

Patients may have features of both = “Asthma COPD Overlap” (not a syndrome)

Case: Mrs DD age 53

- Chest tightness and sob on moderate exertion, daily activities OK
- Cough and sputum daily for 8years + winter bronchitis past 3 years
- This year 2 “attacks” treated with antibiotics and bronchodilators
- Ex smoker (3 years), 30 pack years

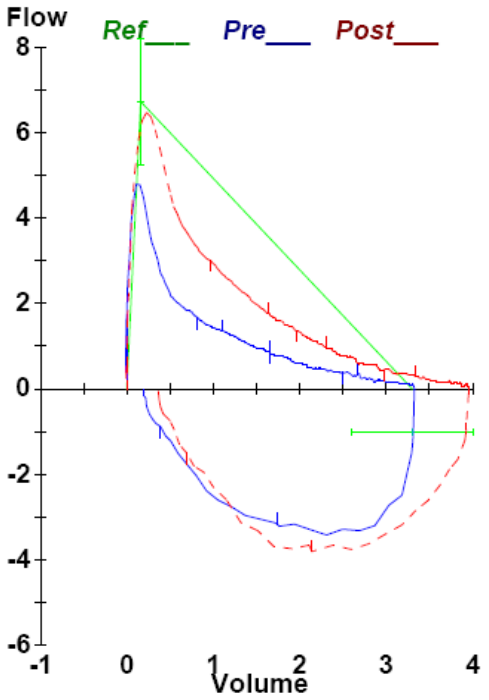
- Spirometry:

RESPIRATORY FUNCTION REPORT

Flow Vol Loops/Spirometry (ECSC)

Last bronchodilator: Ventolin > 4hrs

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
FEV1	Liters	2.83	(1.68)	(59)	2.37	84	41
FVC	Liters	3.30	3.34	101	3.96	120	18
FEV1/FVC	%	79	(50)		(60)		
FEF25-75%	L/sec	3.26	(0.84)	(26)	(1.22)	(37)	44
PEF	L/sec	6.71	(4.86)	(72)	6.48	97	33



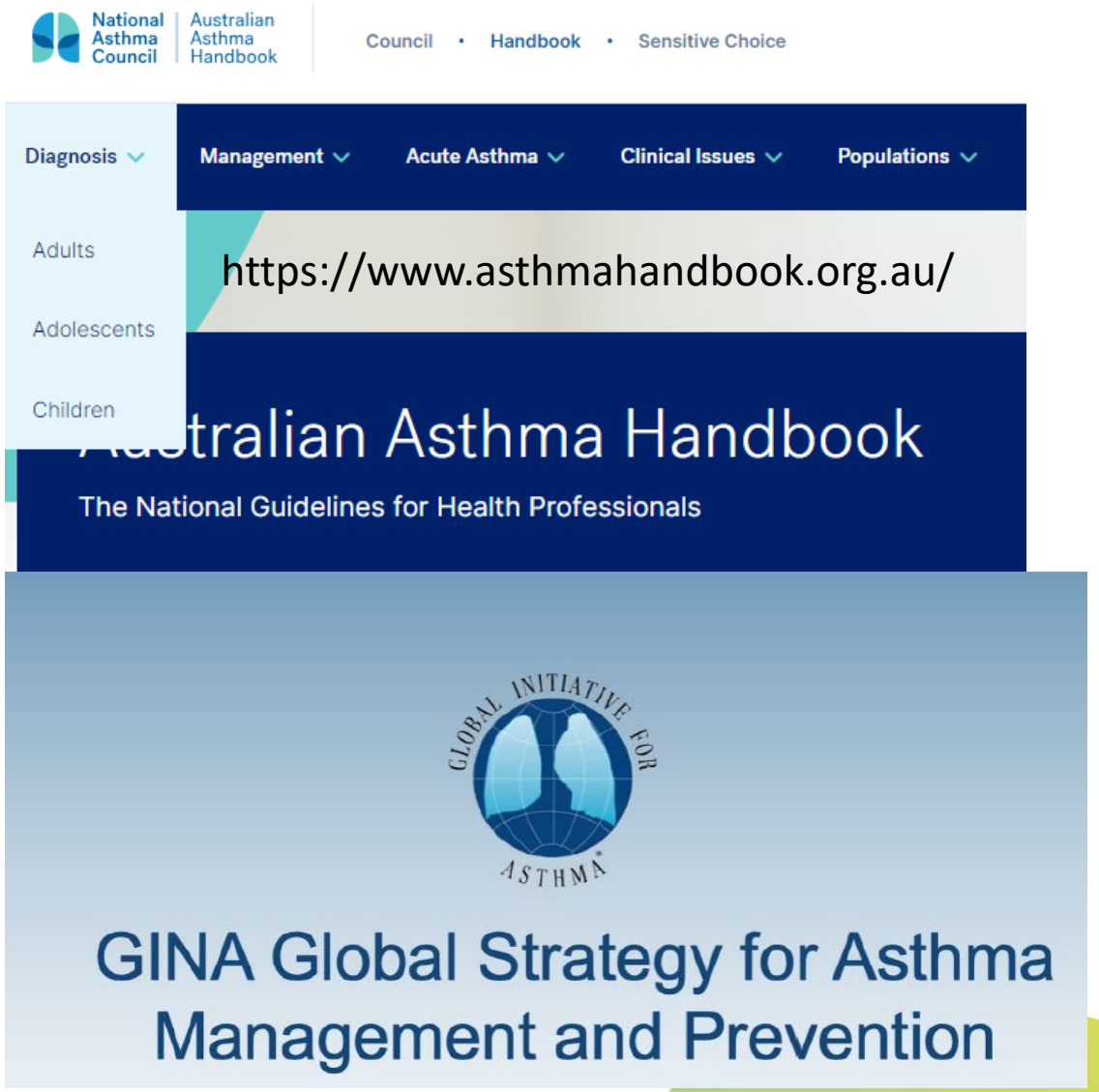
Patient effort (1 - 10): **Patient manouevre (1 - 10):**

We will return to this case later…..

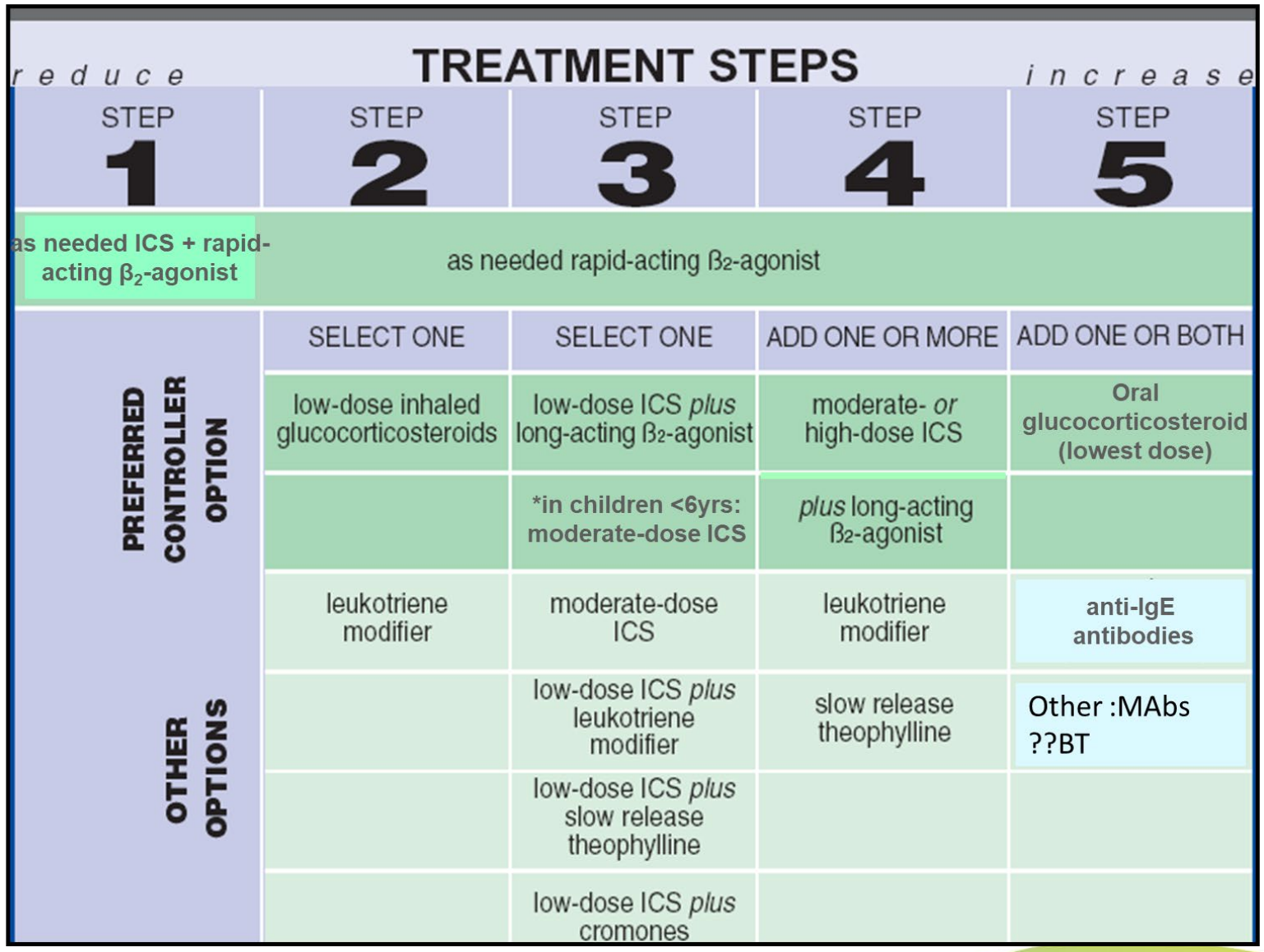
Disease specific guidelines: Asthma

Western Health

- Australian asthma handbook
- GINA: Global initiative for Asthma
- Similar step wise approach to management
- Important difference is to step down when control achieved (vs COPD, progressive disease)



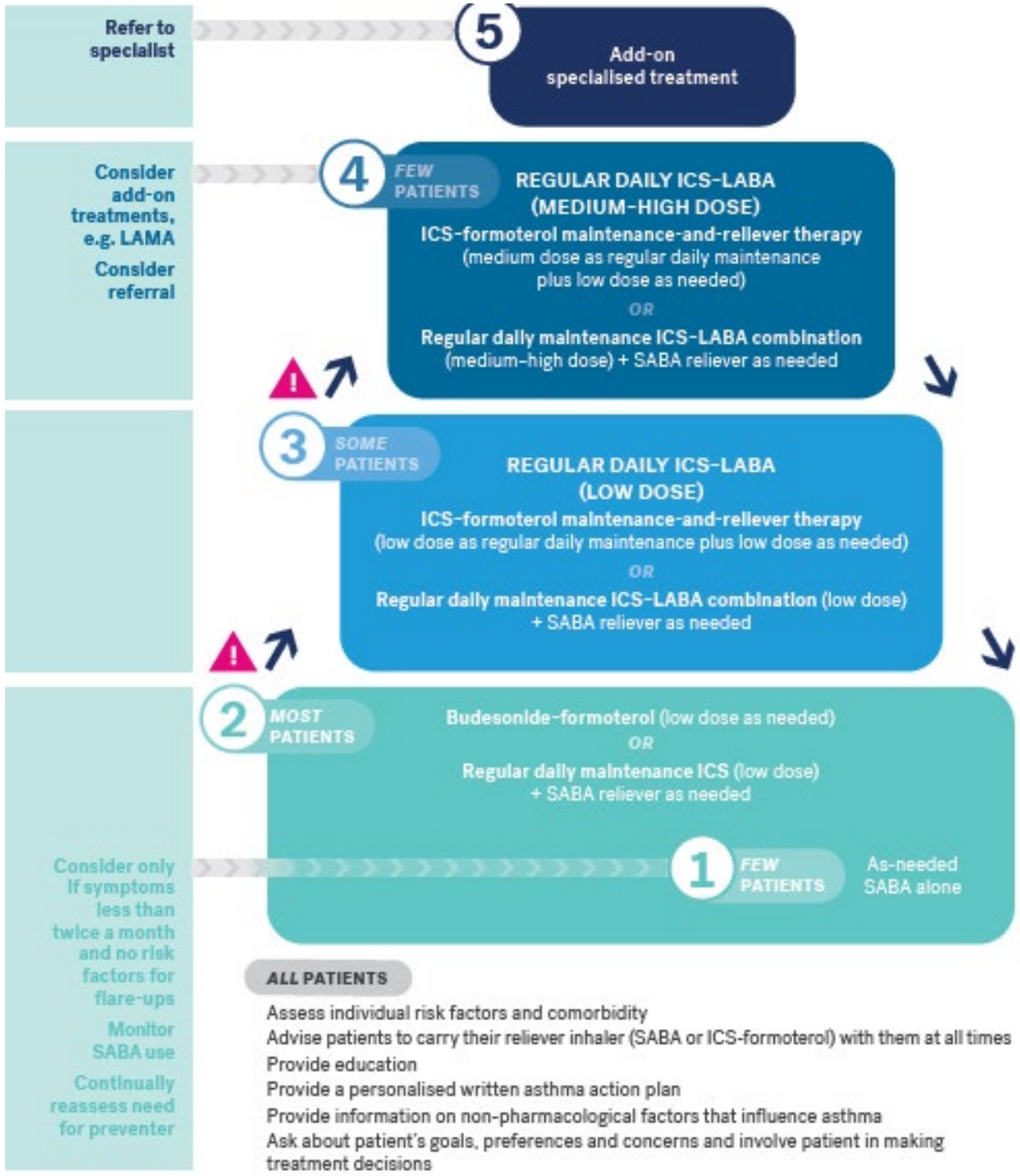
Stepwise approach to asthma treatment (GINA)



reduce	TREATMENT STEPS				increase
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
	as needed ICS + rapid-acting β_2-agonist	as needed rapid-acting ß2-agonist			
PREFERRED CONTROLLER OPTION		SELECT ONE	SELECT ONE	ADD ONE OR MORE	ADD ONE OR BOTH
		low-dose inhaled glucocorticosteroids	low-dose ICS *plus* long-acting ß2-agonist	moderate- *or* high-dose ICS	Oral glucocorticosteroid (lowest dose)
			*in children <6yrs: moderate-dose ICS	*plus* long-acting ß2-agonist	
OTHER OPTIONS		leukotriene modifier	moderate-dose ICS	leukotriene modifier	anti-IgE antibodies
			low-dose ICS *plus* leukotriene modifier	slow release theophylline	Other :MAbs ??BT
			low-dose ICS *plus* slow release theophylline		
			low-dose ICS *plus* cromones		

Note due to safety concerns LABA should only ever be prescribed with ICS

Selecting and adjusting asthma medication for adults. Asthmahandbook.org.au



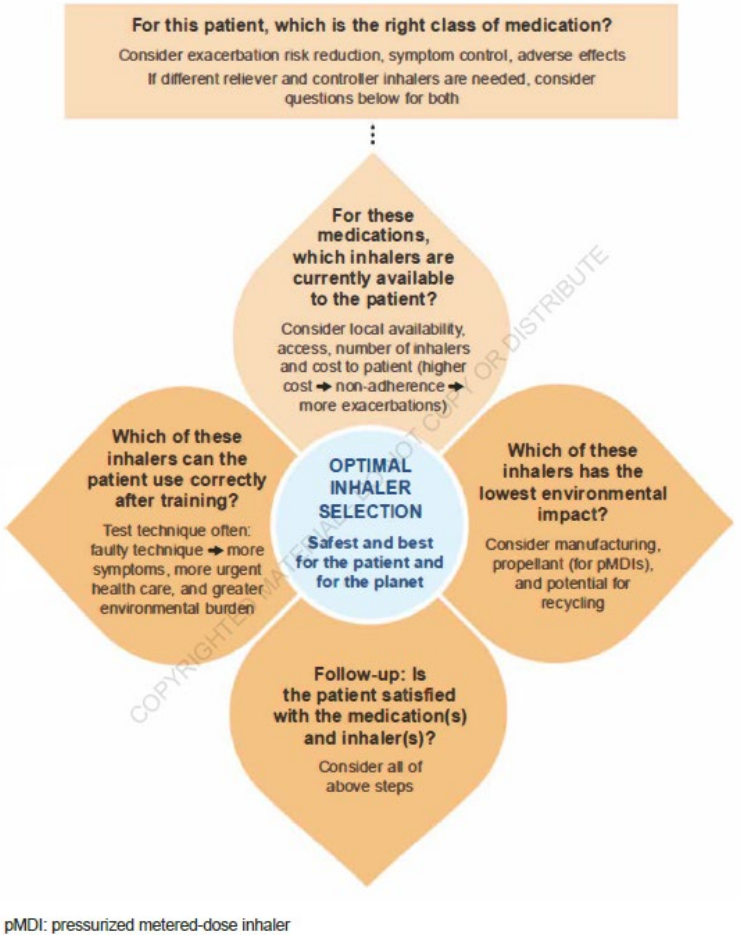
Adult asthma inhaled treatment approaches

- Anti-inflammatory reliever only therapy
- Maintenance and reliever therapy
- Maintenance ICS + as needed SABA
- Maintenance ICS-LABA + as needed SABA

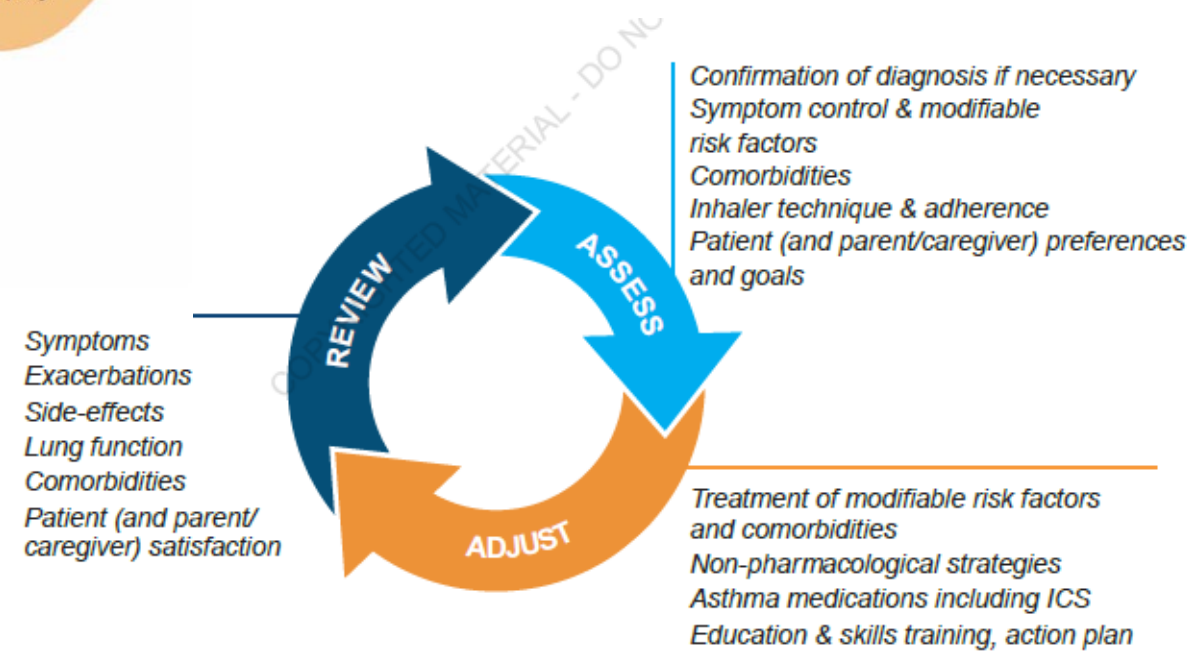
Notes:

- ICS are the cornerstone of Asthma therapy
- Strengths and weaknesses of each approach
  - Eg flexibility, simplicity, acceptance of sub-perfect control
- Options allowed by PBS set out in AAH
- Shared decision making – approach, device, frequency

GINA graphics
Inhaler selection
Asthma management cycle



pMDI: pressurized metered-dose inhaler



Asthma Severity vs Control?

Classification of asthma severity and recent asthma symptom control in adults

Recent asthma symptom control in adults is defined by frequency of symptoms, the degree to which symptoms affect sleep and activity, and the need for reliever medication over the previous 4 weeks.

Any experience of flare-ups or night-time waking due to asthma symptoms, even if infrequent, usually indicates that the person needs regular preventer treatment.

Severity of asthma in adults is defined by treatment needed to maintain good control, not by the severity of acute flare-ups.

For patients prescribed a preventer, asthma severity can only be determined after using a preventer for at least 8 weeks.

Somewhat confusing terms

Severity of asthma overall

(not severity of attack)

Severity may be defined by the amount of treatment needed to maintain good control

Control is defined by frequency of symptoms over previous 4 weeks

(nb degree of control is often overstated by patients)

Levels of asthma control GINA 2011

Western Health

Characteristic	Controlled (all of the following)	Partly controlled (any measure present in any week)	Uncontrolled
Daytime symptoms	None (twice or less/week)	More than twice/week	Three or more features of partly controlled asthma present in any week
Limitations of activities	None	Any	
Nocturnal symptoms/awakening	None	Any	
Need for reliever/rescue treatment	None (twice or less/week)	More than twice/week	
Lung function (PEF or FEV_1)	Normal	<80% predicted or personal best (if known)	
Exacerbations	None	One or more/year	One in any week

Assessing Asthma Control

Asthma Control Questionnaire (ACQ)

ACQ © Elizabeth Juniper

- The ACQ asks 5 symptom questions related to asthma control over 1 week (also SABA use and spirometry – 6 and 7 item version)
- The full ACQ score is the mean of the items (<0.75, well controlled; 0.75–1.5, not well controlled; >1.5, uncontrolled)

Please answer questions 1 - 5.

Circle the number of the response that best describes how you have been in the last week.

1.	On average, in the last week, how often were you **woken by your asthma** during the night?	0 Not at all 1 Hardly ever 2 A few times 3 Several times 4 Many times 5 A great many times 6 Unable to sleep because of asthma
2.	On average, in the last week, how **were your asthma symptoms when you woke up** in the morning?	0 No symptoms 1 Very mild symptoms 2 Mild symptoms 3 Moderate symptoms 4 Quite severe symptoms 5 Severe symptoms 6 Very severe symptoms
3.	In general, in the last week, how **limited were you in your day-to-day activities** because of your asthma?	0 Not at all limited 1 Very slightly limited 2 Slightly limited 3 Moderately limited 4 Very limited 5 Extremely limited 6 Totally limited
4.	In general, in the last week, how much **shortness of breath** did you experience because of your asthma?	0 None 1 Very little 2 A little 3 A moderate amount 4 Quite a lot 5 A great deal 6 An extreme amount
5.	In general, in the last week, how often did you **wheeze**?	0 None of the time 1 Hardly any of the time 2 A little of the time 3 A moderate amount of the time 4 A lot of the time 5 Most of the time 6 All the time

Asthma Control Test

5 questions related to control over previous 4 weeks.

Scores 5-25, higher are better, ≤ 19 is not well controlled

Assessing Poor symptom control

- Assess inhaler technique
- Discuss adherence and barriers (including costs, beliefs)
- Confirm diagnosis asthma
- If possible remove risks, assess and manage comorbidities
- Consider step up therapy
- Refer if still uncontrolled after 3-6 months high dose ICS-LABA or ongoing risks, earlier if very severe or difficult to control, doubt re diagnosis, occupational asthma suspected

Adjusting therapy:
Step down

- Review control and risk factors periodically, minimum annually.
    - Also after changing treatment and after flareups.
    - More frequently during pregnancy.
- If good control maintained for 2-3 months and at low risk of flare-ups consider stepping down by one step unless already on low dose ICS or prn low dose Budesonide/Formoterol
- Do not attempt step down if : patient travelling, pregnant, or exposed to triggers
- Update the written action plan

Step up

- Consider control, adherence, risk of flare and alternative explanation
- High dose ICS should only be short term. If need ongoing high dose ICS or frequent OCS refer for specialist assessment

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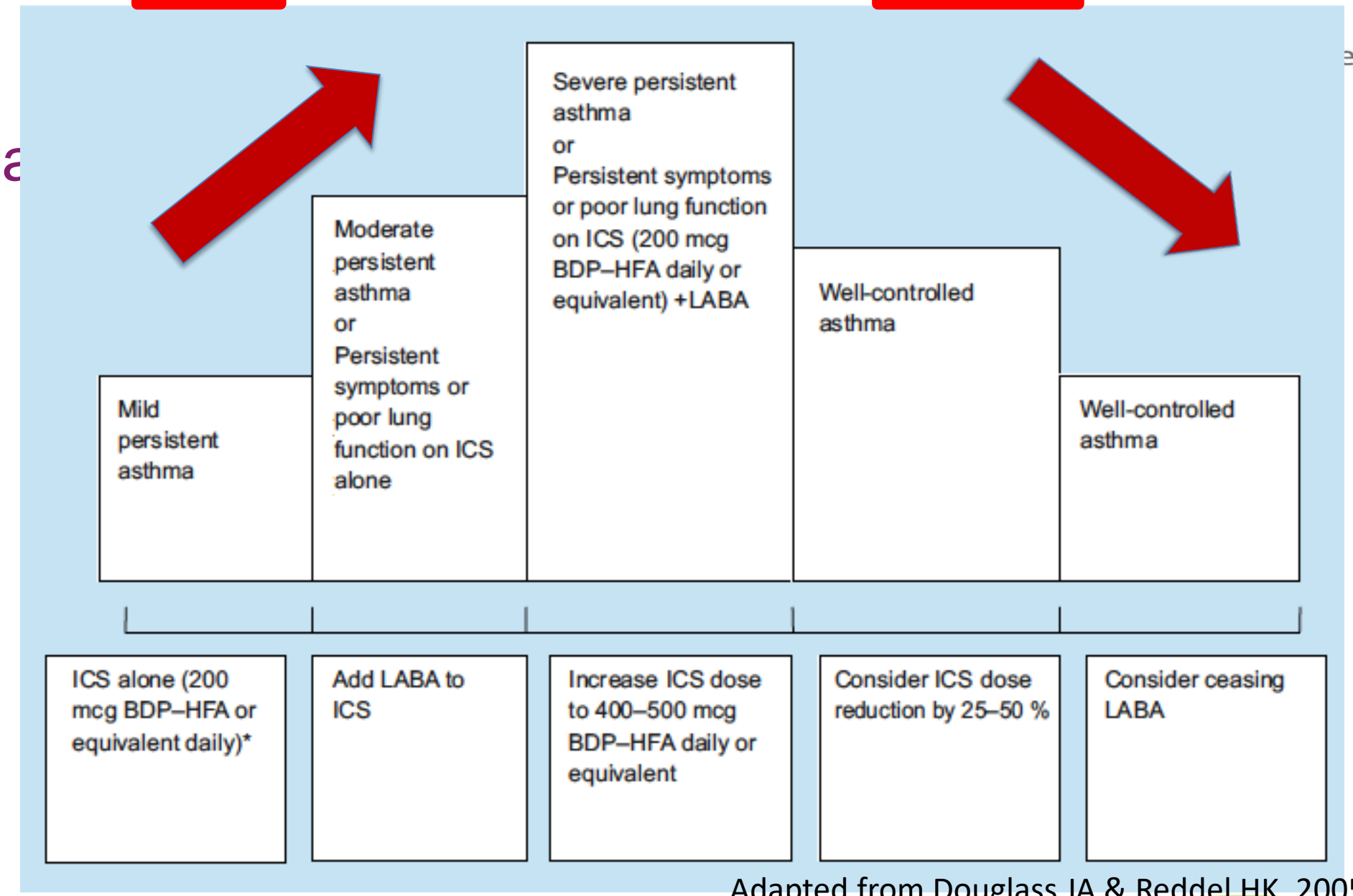


Adapted from Douglass JA & Reddel HK, 2005

Stay on Low dose ICS or prn low dose ICS/LABA (AAH 2025)

Asthma Risks

- Increased risk of flare-ups
  - Poor control, flare in previous year, high SABA use
  - Poor lung function, poor perception of Sx
  - Other lung disease, mental health, soc-eco, other exposures, Eosinophilic airway inflammation (blood surrogate)
- Increased risk of life-threatening asthma (in addition to above)
  - Previous episodes, sudden onset, delayed presentation, no WAP, comorbid cardiovascular disease
- Factors associated with thunderstorm asthma
  - Spring time allergic rhinitis “Sneeze and wheeze”
- Factors associated with accelerated loss of lung function
  - Chronic mucus hypersecretion, flares, cigarettes, occupational A
- Factors associated with adverse effects of treatment

Risks associated with therapy:

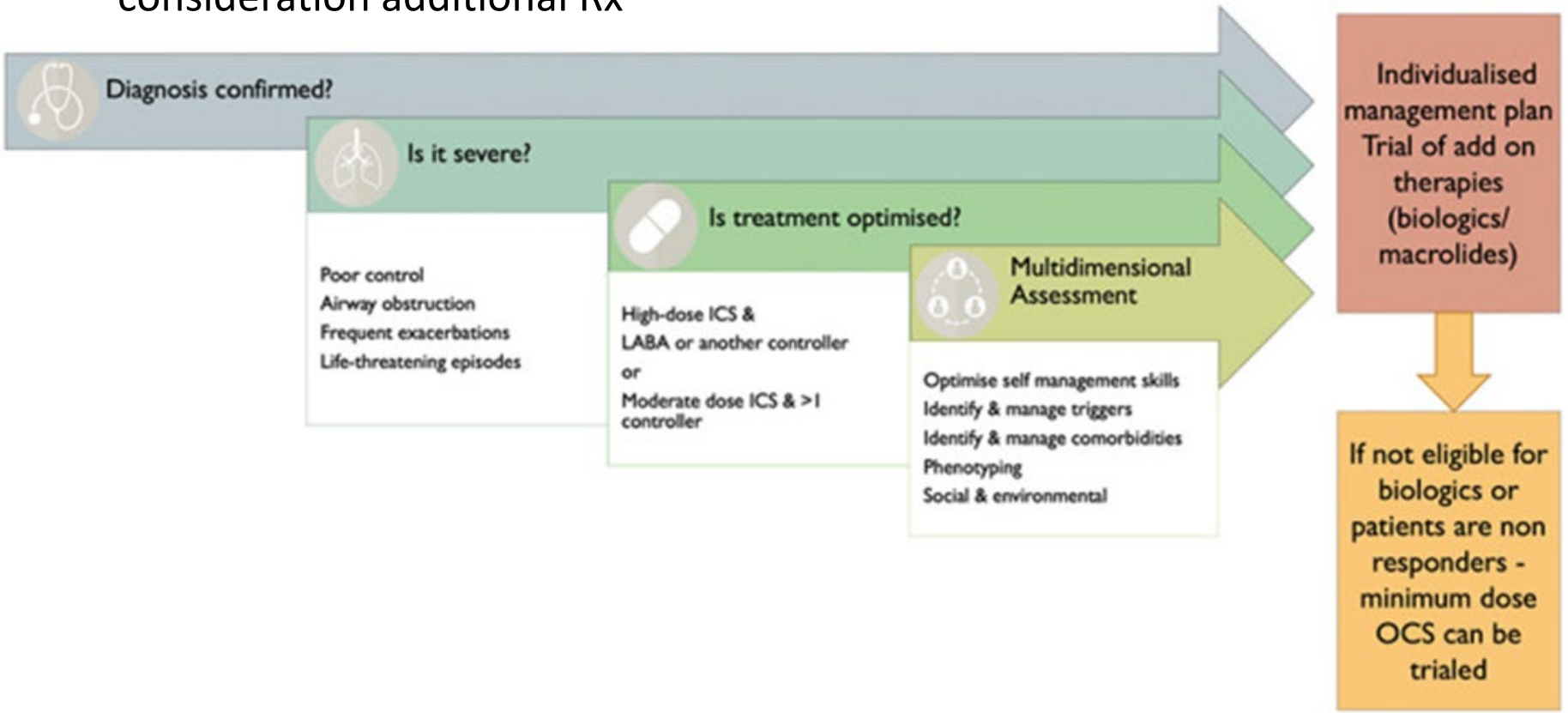
Oral corticosteroids stewardship for asthma in adults and adolescents: A position paper from the Thoracic Society of Australia and New Zealand

Blakey J. Respirology 2021 Dec;26(12):1112-1130. doi: 10.1111/resp.14147. Epub 2021 Sep 29.

- OCS have proven benefit in both acute exacerbations and in chronic severe asthma, but have potentially severe adverse effects, both acute and long term, and cause significant impact on patient QoL
- Prescription of OCS for asthma is common.
- Strong evidence indicates that there is overuse of OCS to treat asthma and a harmful dose (lifetime dose >1000 mg prednisolone-equivalent) may be exceeded in up to 25% of patients (?even lower may be harmful)

Asthma risks:
Approaches to reduce OCS burden

- Reductions in OCS use are essential and primary strategies should focus on optimizing inhaler technique, improving treatment adherence, use of add-on treatments such as LABA and LAMA as appropriate and ensuring adequate doses (lowest effective OCS) + consideration additional Rx

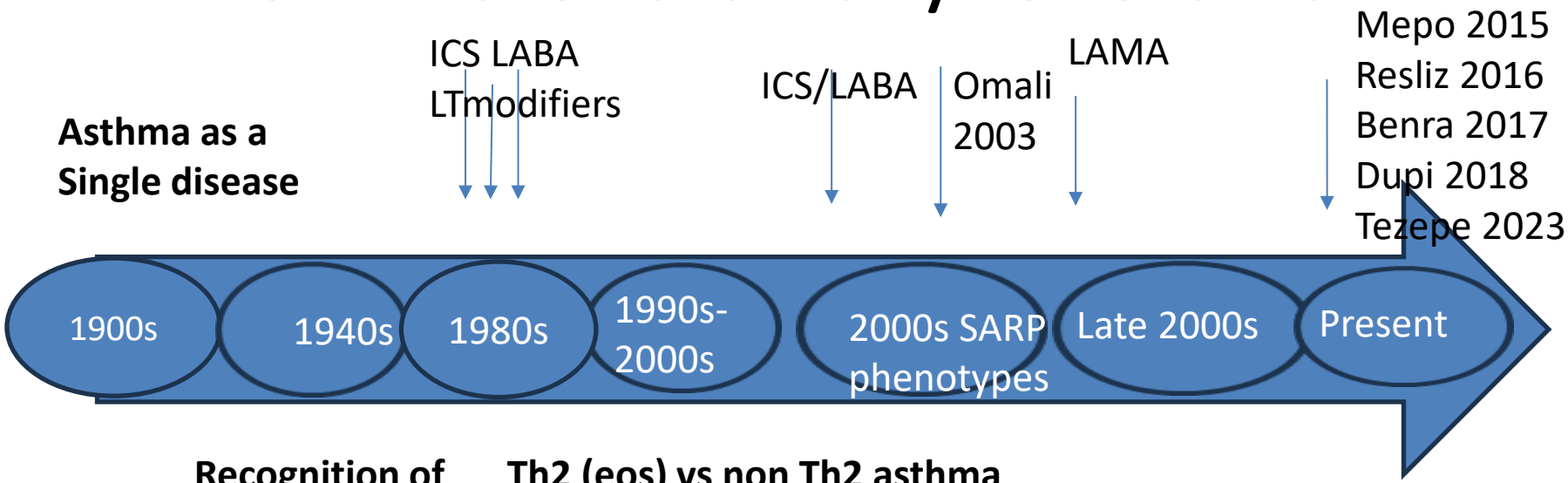


Severe Asthma Checklist - © CRE in Severe Asthma

Asthma specialist care

- Confirmation of diagnosis (if in doubt)
- Management comorbidities
- Advanced therapies

Asthma evolution/revolution



Recognition of Th2 (eos) vs non Th2 asthma
Asthma heterogeneity

Search for genetics identities phenotypic clusters, underlying endotypes
Present day: treatment responsive endotypes with associated biomarkers

NIH Asthma programs
1989 NAEPP
GINA 1993

Investigation of variability has led to the identification of many phenotypes

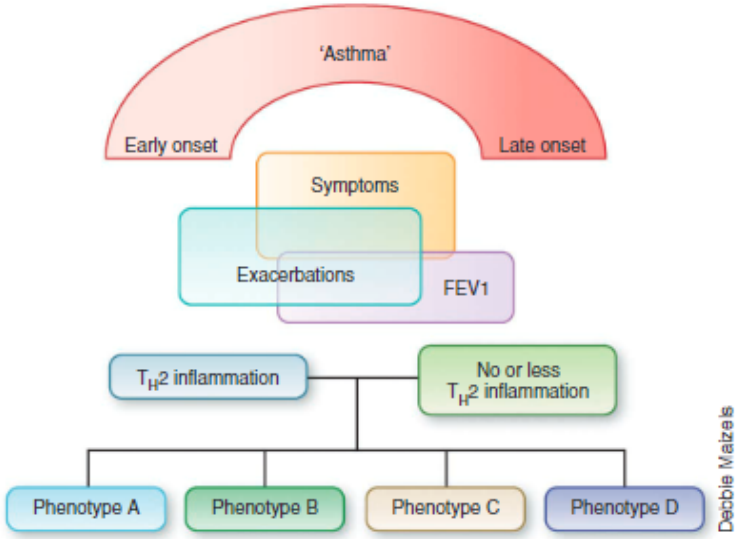


Figure 1 Schematic representation of the umbrella term 'asthma'. The key clinical features of severity (lung function, symptoms and exacerbations), inflammatory characteristics (particularly T_H2 immunity) and their division into associated phenotypes are shown. However, these phenotypes have not yet been fully characterized.

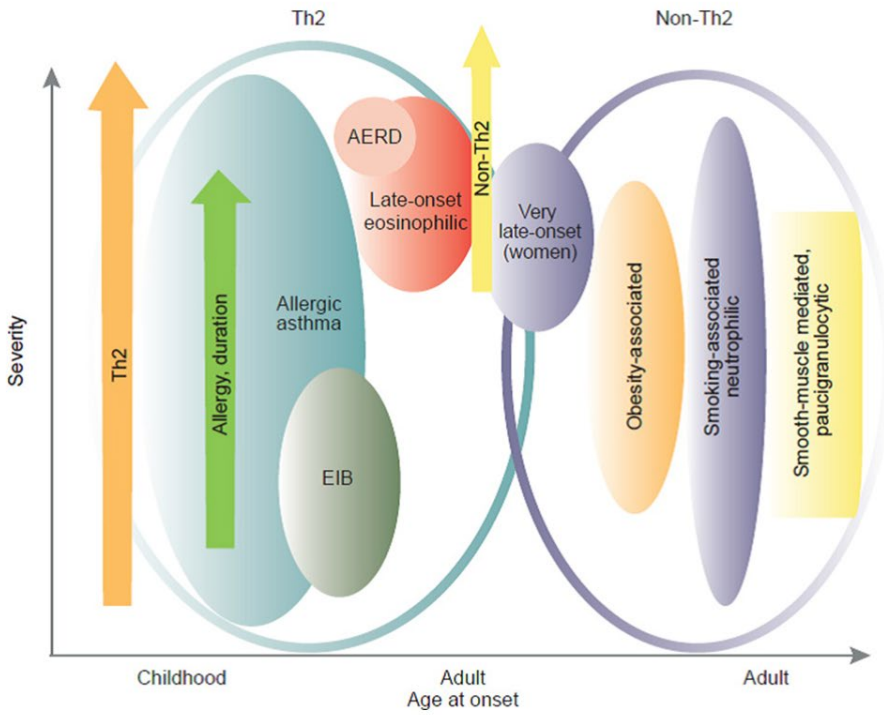
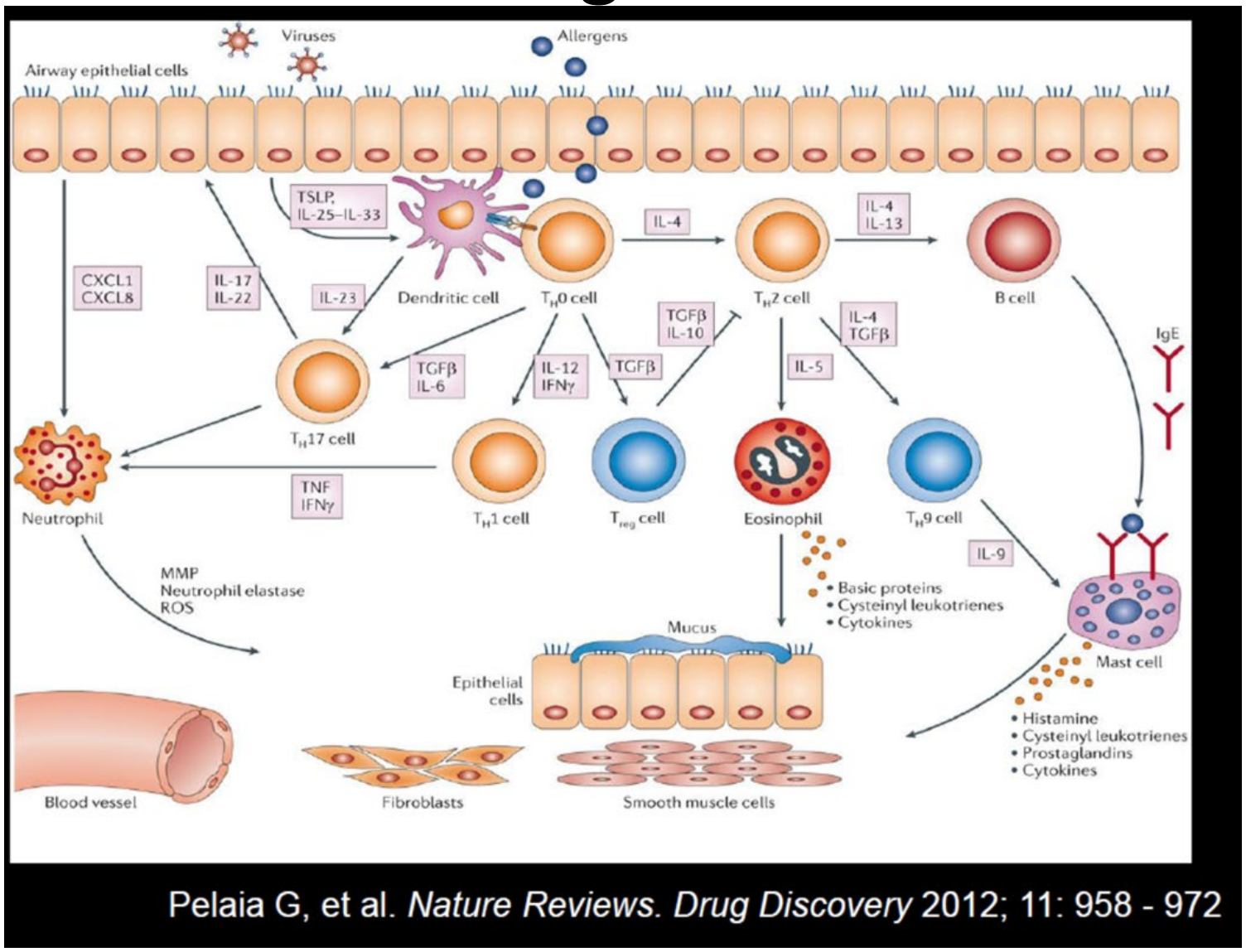


Figure by Debbie Maizels, Zoobotanica Scientific Illustration (www.scientific-art.com)

Resulting in identified treatment pathways/ biologics

- IgE
- Eos
- IL4/ 13
- TSLP



Pelaia G, et al. *Nature Reviews. Drug Discovery* 2012; 11: 958 - 972

Severe Asthma: Biologic therapies

	Omaliz-umab	Mepoliz-umab	Reliz-umab	Benraliz-umab	Dupil-umab	Tezepel-umab
Biomarkers (exacs)	PBS	PBS	Not Aus	PBS	PBS	TGA
Eos FeNO	≥260 ≥19.5	≥300 No assoc	≥400 No assoc	≥300 No assoc	≥300 ≥25	≥150 ≥25
Outcomes						
Reduction in exacs mOCS reduction Improved QoL FEV1 improvement	25% + +/-	50 ++ + +	40 + +/-	50 ++ + +	70 ++ + ++	70 ++ ++
Comorbidities:						
CRwNP Atopic dermatitis Chronic urticaria EGPA	++ + 	++ ++	 +	+ +	++ ++ 	
Practical considerations	s/c dose variable	s/c dose fixed	iv	s/c dose fixed	s/c dose fixed	s/c dose fixed
	2-4/52	4/52	4/52	4 then 8/52	2/52	4/52

JE Kavanagh Breathe 2021

Asthma case 1: Francisco

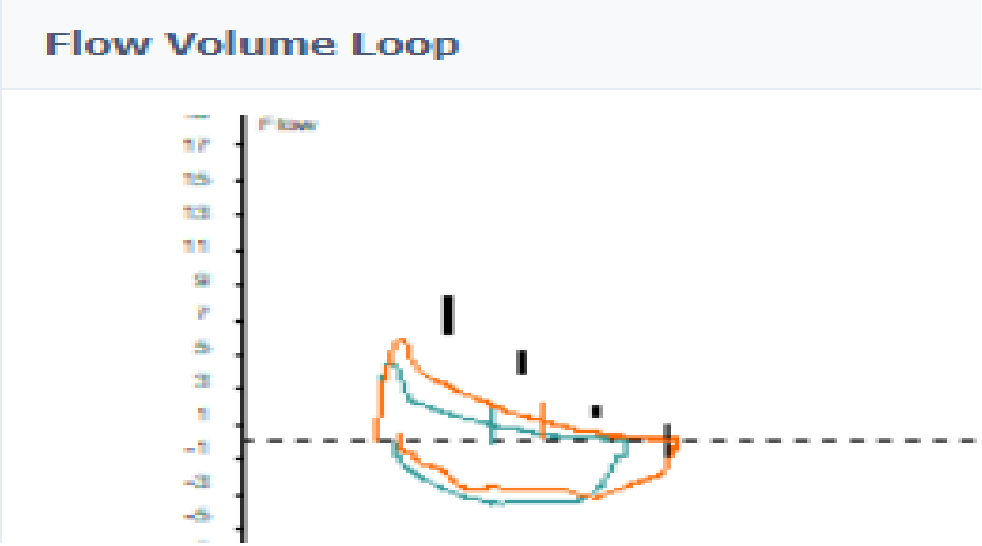
- First seen 2015, then age 47
- Asthma since childhood, needing 2-3 courses OCS per year. Never smoker
- Triggers cold, infections, exercise. No inhalational exposures
- B/g allergic rhinitis
- Therapy: Seretide 250/25 2 bd, Nasonex, (Montelukast ineffective)
- PFTs :

Pre FEV1 1.76, 50% predicted

Post FEV1 2.44, 71% predicted

FEV1/FVC post BD = 0.53

BDR 720ml, 42%



- Note fixed airflow limitation – should we call him COPD?

- Other treatments tried – extra ICS, Tilade
- FEV1 still bad 1.63/1.95 (57%), 20% BDR
- Control? ACQ 3.0
- Other thoughts?
  - Symptomatic allergic rhinitis
  - Nasal: no polyps
  - Investigations?

- FEV1 still bad 1.63/1.95 (57%), 20% BDR
- Poor symptomatic control ACQ 3.0
- Other thoughts?
  - Rye and grass desensitisation? Asthma too bad
  - Nasal: no polyps
  - Investigations: Repeat bloods: IgE 373, Eo range 0-0.3-1.0. Grasses and HDM sensitisation
- Options (now 2018) : research study D2 Leukotriene pathway no response (withdrawn), anti IgE therapy, PFP Benralizumab

SERUM ALLERGEN SPECIFIC IgE

SINGLE ALLERGEN	Allergen-specific IgE	Interpretation
Bahia grass	20.3 kUA/L	Very High
Bermuda (couch) grass	1.83 kUA/L	Moderate
Rye grass	31.6 kUA/L	Very High
Dust Mite (Derm Pteron)	1.02 kUA/L	Moderate
Aspergillus Fumigatus	< 0.35 kUA/L	Negative
Dog dander	< 0.35 kUA/L	Negative

Coll.Date:	01/06/15	29/05/17	17/10/17
Coll.Time:	12:00	12:15	11:10
Lab.No:	41585254	30813746	34063064
Haemoglobin:	14.6	--	--
Haemoglobin:	--	147	145
WCC:	4.8	8.3	5.5
Eosinophils:	0.3	0.0	1.0
Basophils:	0.0	0.0	0.1

Progress

- Benralizumab: ACQ 3.0 to 0.4, improved nasal symptoms, nil OCS use 5+ years
- Ongoing: minimal SABA, lung function improved, nasal symptoms improved
- Considerations:
  - "ideal patient"
  - Repeat biomarkers if need
  - Choice of biologic
  - Comorbidities
  - What to do with inhalers

Respiratory Function Trend Report

Date	20/11/23	15/04/21	19/01/18	31/07/17
Age	55.94	53.34	50.10	49.64
Height	167.00	167.00	167.20	167.20
Weight	69.00	66.60	64.20	66.30
Spirometry				
FEV1 (Pre)	2.02 (62%)	2.53 (76%)	1.63 (48%)	1.72 (50%)
Post	2.47 (+14%)*	2.61 (+3%)	1.95 (+20%)	2.44 (+42%)
Other				
FVC (Pre)	3.94 (96%)	4.30 (102%)	3.47 (81%)	3.71 (86%)
Post	4.02 (+2%)*	4.35 (+1%)	3.86 (+11%)	4.44 (+20%)
Other				
VC (Pre)	4.24 (103%)	4.53 (108%)	4.40 (102%)	4.46 (104%)
Post	4.02 (-5%)*	4.48 (-1%)	4.27 (-3%)	4.60 (+3%)
Other				
FEV1/(F)VC (Pre)	0.48	0.56	0.37	0.39
Post	0.61	0.58	0.46	0.53
Other				

Asthma case 2: Mary

- Now 81yo, current RACF resident
- Alzheimer's Dementia with BPSD
- Recurrent admissions (10 by Aug 2023) with exacerbations of asthma, associated with delirium, aggression, worsened by OCS, some adherence issues (at that time not coping at home)
- Bloods:

Persistent high Eos

Thoughts?

Coll.Date:	08/08/23	15/08/23	16/08/23	17/08/23
Coll.Time:	07:59	12:10	07:53	08:13
Lab.No:	49294330	49410129	49410420	49412310
Monocytes:	0.7	0.8	0.8	0.8
Eosinophils:	1.8	1.8	1.8	0.9

Mary progress

- Decision to start Benralizumab for severe eosinophilic asthma (June 2023)
- Logistics: starting in hospital (first dose August 2023) vs at RACF, staff training, pharmacy support services, family (daughter) nb role of Asthma outreach nurse to make this happen
- Asthma stable, ACQ 4.2 to 1.4 (or 0 by RACF staff), no exacerbations, no admissions (combination of RACF care and therapy)

Asthma specialist care

- Confirmation of diagnosis (if in doubt)
- Management comorbidities
- Advanced therapies

- Questions/ discussion?

Disease specific guidelines: COPD
COPD Management guidelines

COPD-X

The COPD-X Plan:

Australian and New Zealand Guidelines
for the Management of
Chronic Obstructive Pulmonary Disease
2024

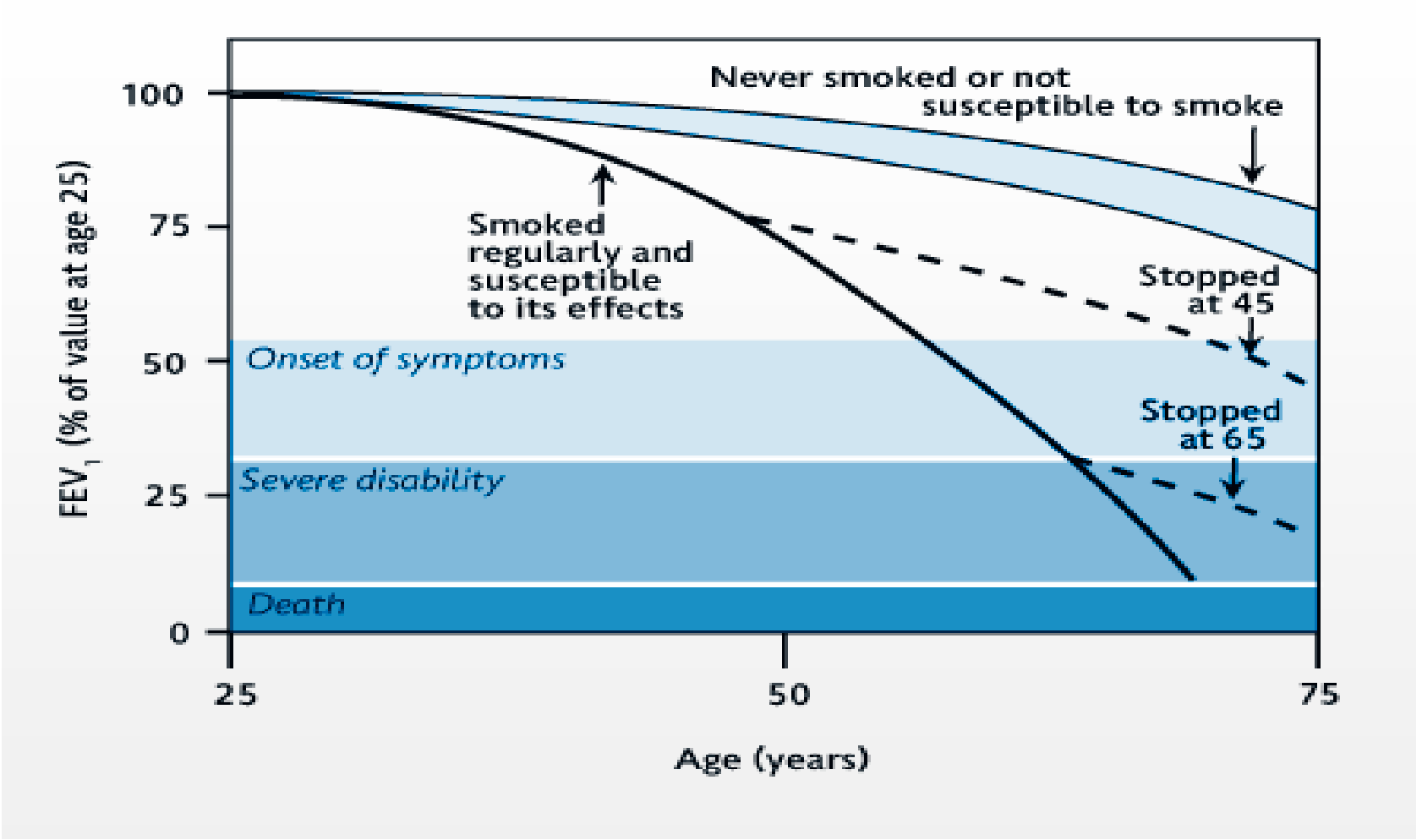
GOLD

Management of COPD
COPD-X Plan

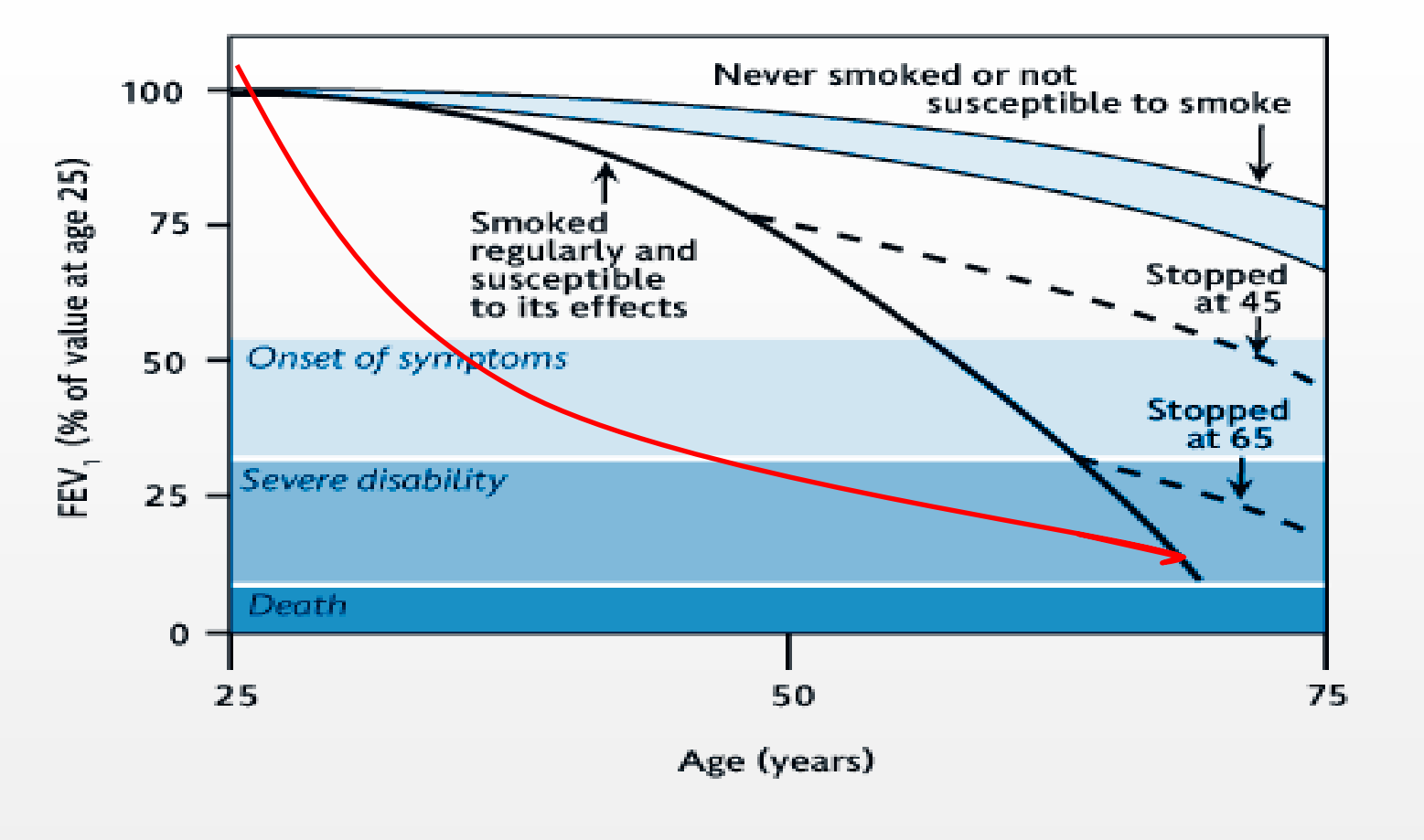
Principle	Action
C	**C**onfirm diagnosis and assess severity
O	**O**ptimise lung function
P	**P**revent deterioration
D	**D**evelop support network and self-management plan
X	e**X**acerbation – manage appropriately

COPD. Australian and New Zealand management guidelines and the COPD handbook. Available at URL: http://www.lungnet.org.au/COPDHandbook.pdf

Lung function declines with advancing age and continued smoking



Lung function declines with advancing age and continued smoking



Adapted from Fletcher C, Peto R. *Br Med J* 1997; 1: 1645–8.

Recent work suggests this is wrong
Steeper rates of decline in milder/earlier disease - ? Better to intervene earlier

Taxonomy of COPD

Proposed Taxonomy (Etiotypes) for COPD

Figure 1.2

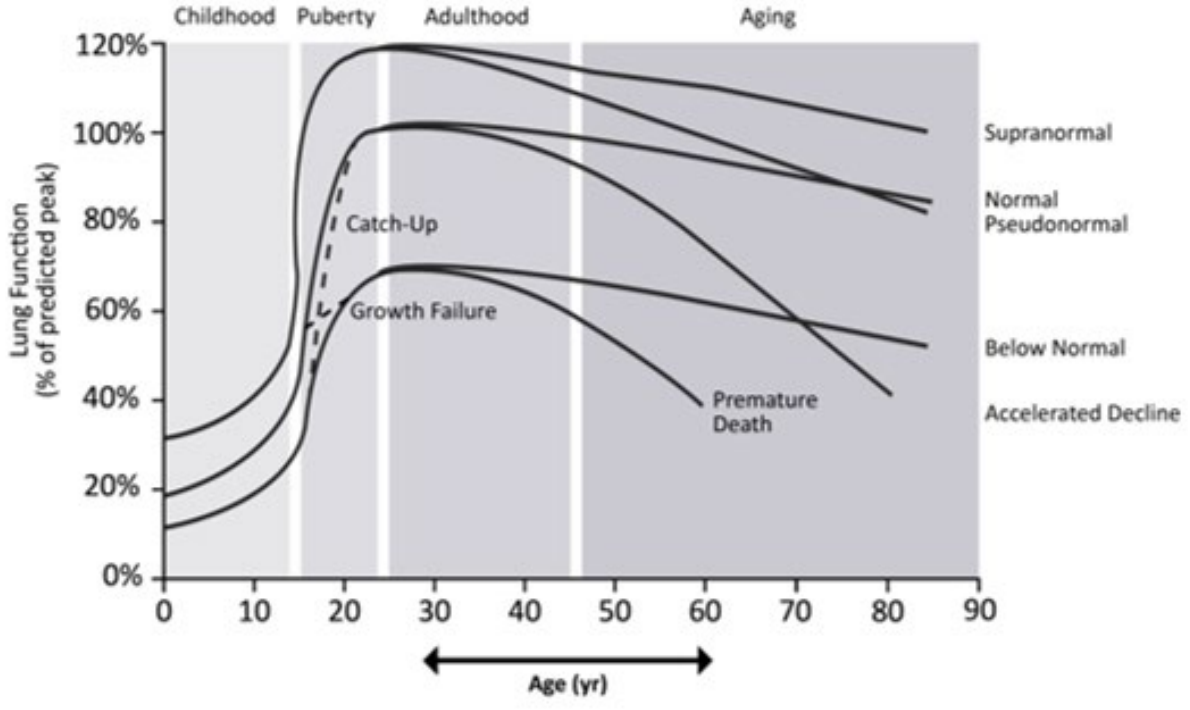
Classification	Description
Genetically determined COPD (COPD-G)	Alpha-1 antitrypsin deficiency (AATD) Other genetic variants with smaller effects acting in combination
COPD due to abnormal lung development (COPD-D)	Early life events, including premature birth and low birthweight, among others
Environmental COPD	
Cigarette smoking COPD (COPD-C)	• Exposure to tobacco smoke, including *in utero* or via passive smoking • Vaping or e-cigarette use • Cannabis
Biomass and pollution exposure COPD (COPD-P)	Exposure to household pollution, ambient air pollution, wildfire smoke, occupational hazards
COPD due to infections (COPD-I)	Childhood infections, tuberculosis-associated COPD, HIV-associated COPD
COPD & asthma (COPD-A)	Particularly childhood asthma
COPD of unknown cause (COPD-U)	

*Adapted from Celli et al. (2022) and Stolz et al. (2022)

Pathways to COPD: FEV1 trajectories

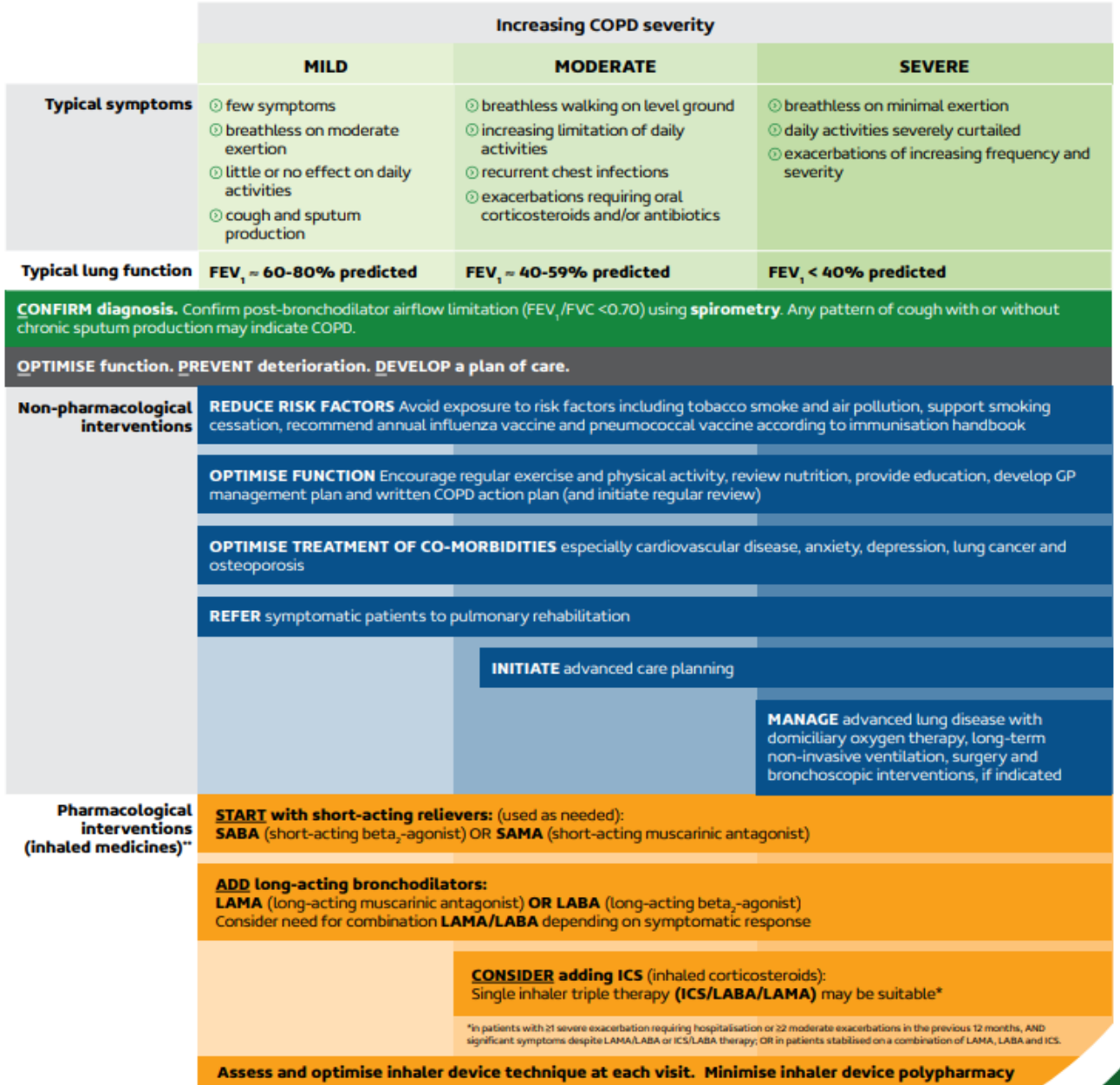
FEV1 Trajectories (TR) Over the Life Course

Figure 1.1



Modified from: Agusti A, Hogg JC. Update on the Pathogenesis of Chronic Obstructive Pulmonary Disease. N Engl J Med. 2019;381:1248-56.

STEPWISE MANAGEMENT OF STABLE COPD



Western Health

Consideration of ICS is now earlier compared to earlier versions:
At least 1 severe exacerbation or 2 moderate exacerbations in previous 12 months and significant symptoms despite LABA/LAMA or LABA/ICS

GOLD Treatment goals

1. **Reduce symptoms**
2. **Reduce risk – disease progression, prevent and treat exacerbations,**
   reduce mortality

Symptom scales:
Modified MRC Dyspnea Scale:
CAT
SGRQ

MODIFIED MRC DYSPNEA SCALE[a]

PLEASE TICK IN THE BOX THAT APPLIES TO YOU | ONE BOX ONLY | Grades 0 - 4

mMRC Grade 0.	I only get breathless with strenuous exercise.	☐
mMRC Grade 1.	I get short of breath when hurrying on the level or walking up a slight hill.	☐
mMRC Grade 2.	I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level.	☐
mMRC Grade 3.	I stop for breath after walking about 100 meters or after a few minutes on the level.	☐
mMRC Grade 4.	I am too breathless to leave the house or I am breathless when dressing or undressing.	☐

[a] Fletcher CM. BMJ 1960; 2: 1662.

CAT™ ASSESSMENT

For each item below, place a mark (x) in the box that best describes you currently.
Be sure to only select one response for each question.

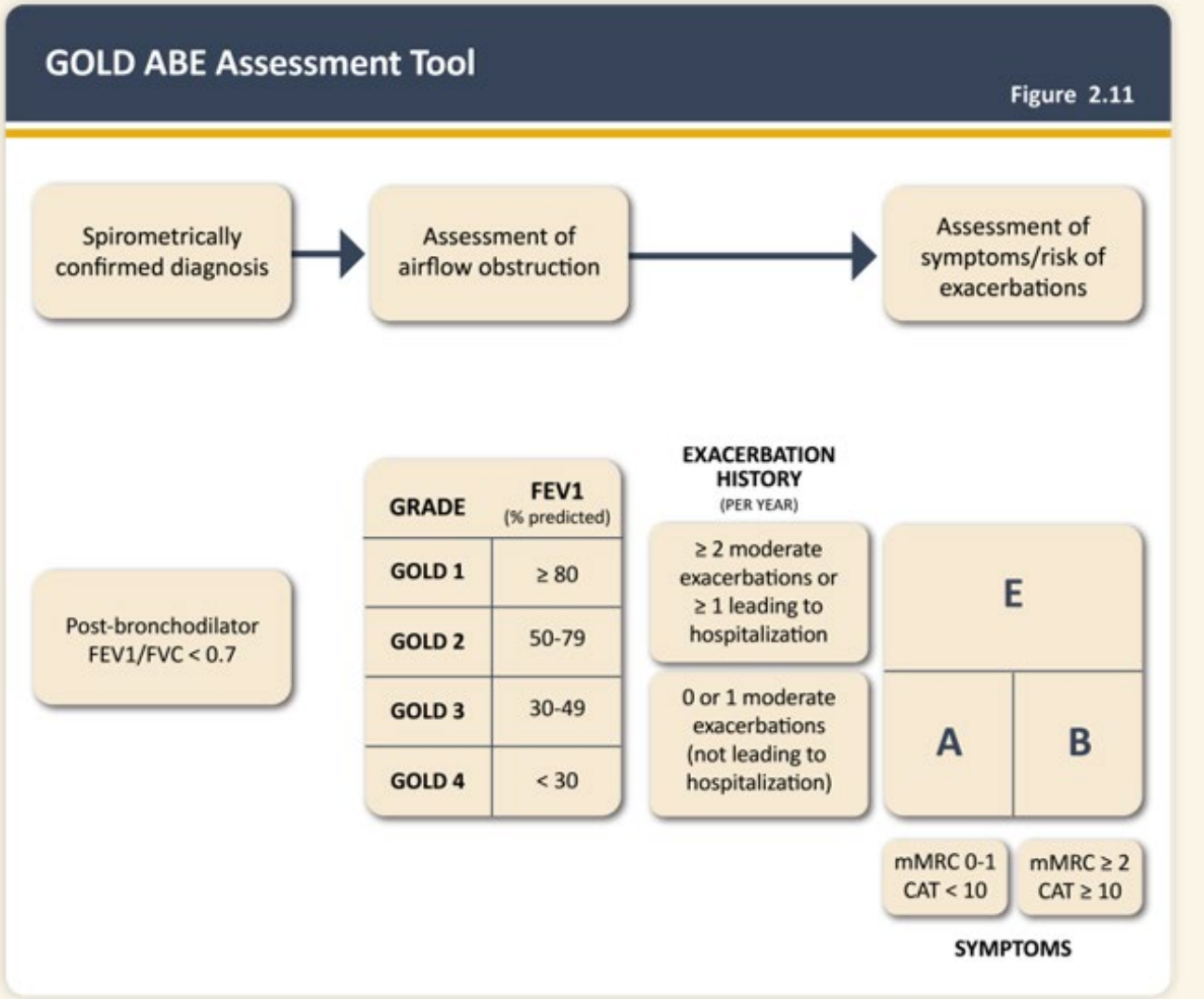
EXAMPLE: I am very happy	0 (X) 2 3 4 5	**I am very sad**	**SCORE**
I never cough	0 1 2 3 4 5	I cough all the time	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5	My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	When I walk up a hill or one flight of stairs I am very breathless	
I am not limited doing any activities at home	0 1 2 3 4 5	I am very limited doing activities at home	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0 1 2 3 4 5	I don‘t sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5	I have no energy at all	

Reference: Jones et al. ERJ 2009; 34 (3); 648-54.

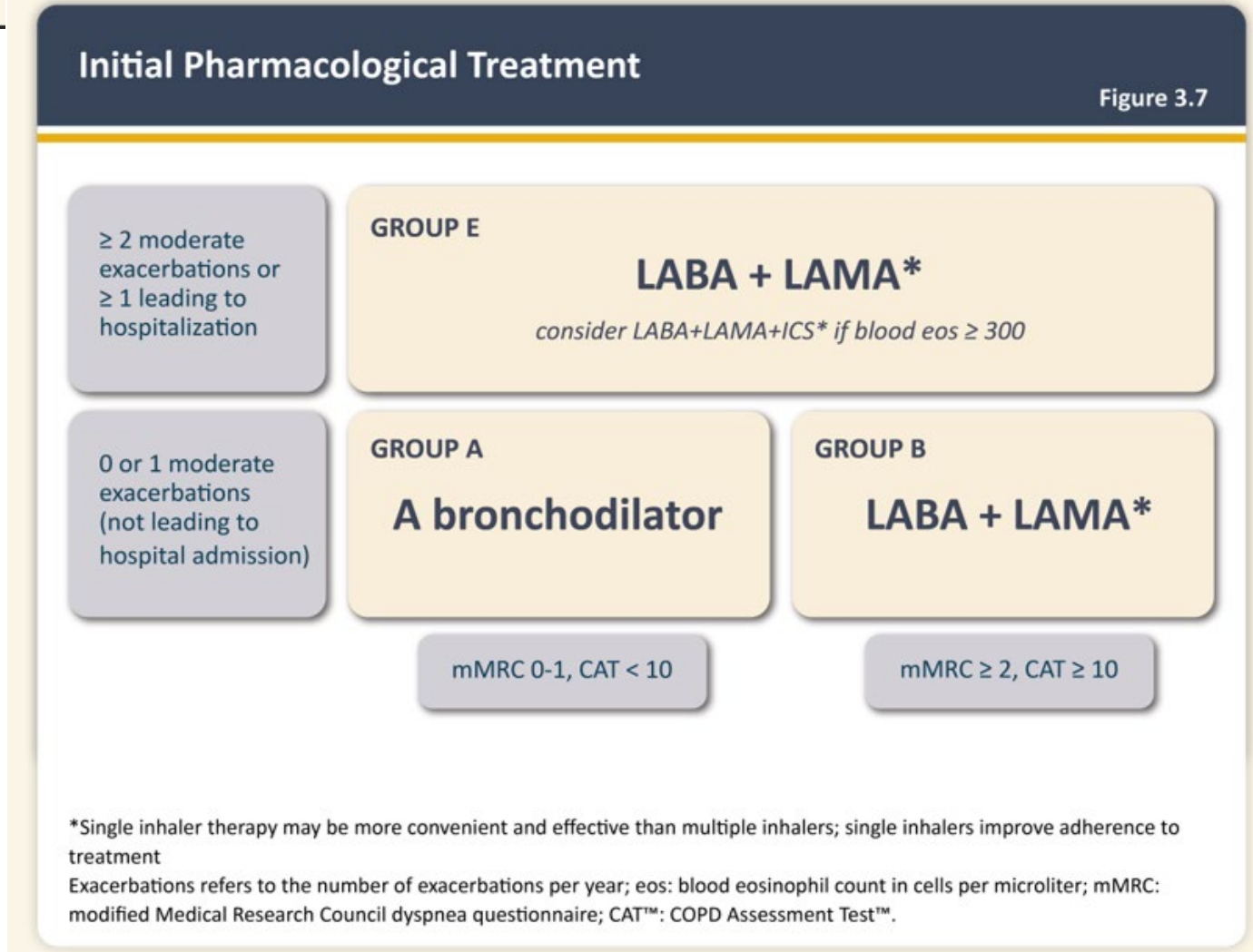
TOTAL SCORE: ◯

GOLD Assessment

Spirometry severity
Exacerbation history
Symptoms



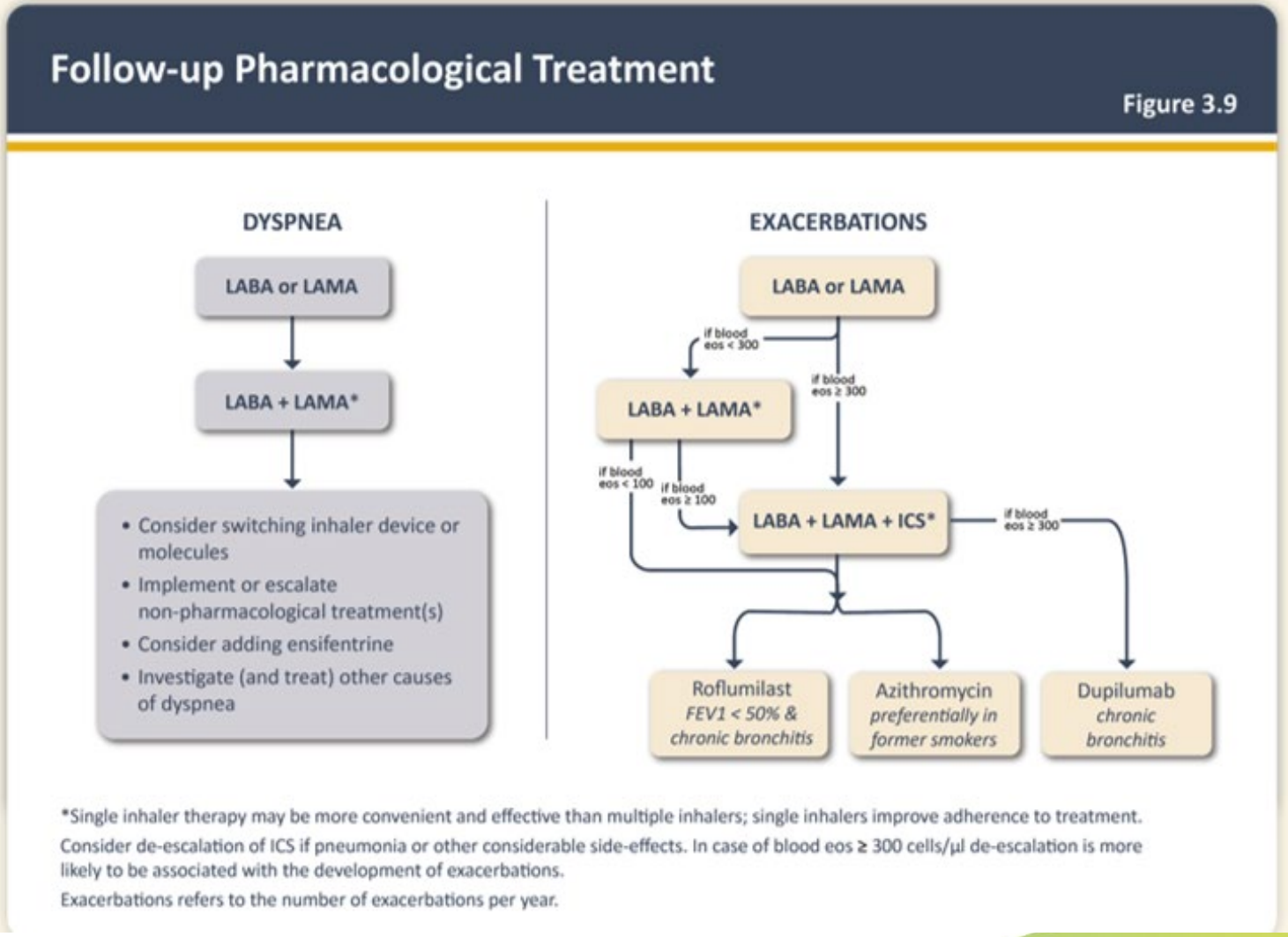
GOLD Initial pharmacotherapy



GOLD follow up therapy

Note Roflumilast is not available in Australia

Dupilumab is now TGA approved(Feb 2025) = A/IL4/IL13 as add on maintenance t/t for uncontrolled COPD with raised Eos on stable combo ICS/LABA/LAMA or LABA/LAMA



Western Health

Factors to Consider when Initiating ICS Treatment

Figure 3.21

Factors to consider when adding ICS to long-acting bronchodilators:

(note the scenario is different when considering ICS withdrawal)

STRONGLY FAVORS USE	History of hospitalization(s) for exacerbations of COPD[#]
	≥ 2 moderate exacerbations of COPD per year[#]
	Blood eosinophils ≥ 300 cells/µL
	History of, or concomitant asthma
FAVORS USE	1 moderate exacerbation of COPD per year[#]
	Blood eosinophils 100 to < 300 cells/µL
AGAINST USE	Repeated pneumonia events
	Blood eosinophils < 100 cells/µL
	History of mycobacterial infection

[#]despite appropriate long-acting bronchodilator maintenance therapy (see Figures 3.7 & 3.18 for recommendations); *note that blood eosinophils should be seen as a continuum; quoted values represent approximate cut-points; eosinophil counts are likely to fluctuate.

Adapted from & reproduced with permission of the © ERS 2019: *European Respiratory Journal 52 (6) 1801219; DOI: 10.1183/13993003.01219-2018 Published 13 December 2018*

Western Health

COPD Specialist referral (COPD-X)

Reason	Purpose
Diagnostic uncertainty	Establish diagnosis and optimise treatment
Unusual symptoms eg hemoptysis	Investigate cause incl. exclusion malignancy
Rapid decline in FEV1 ?Moderate or severe COPD	Optimise management
Onset of cor pulmonale	Confirm diagnosis and optimise treatment
Assess need for oxygen therapy	Optimise mgt, assess +/- prescribe oxygen
Bullous lung disease	Confirm diagnosis, assess for suitability +/- refer for bullectomy
Assess need for Pulmonary Rehab	Optimise mgt, refer to PR service
COPD <40yo	Confirm diagnosis, consider alpha1AT, ?trials
Assessment for LungTx or LVR	Identify criteria for referral to assessment centre
Frequent chest infections	Consider cause(s), ?therapy eg macrolide
Breathing pattern disorder	Establish diagnosis, refer for t/t (eg non-pharma)

Returning to our case:
Apply guideline directed care
Case: Mrs DD age 53

- Chest tightness and sob on moderate exertion, daily activities OK
- Cough and sputum daily + winter bronchitis past 3 years
- This year 2 “attacks” treated with antibiotics and bronchodilators
- Ex smoker (3 years), 30 pack years

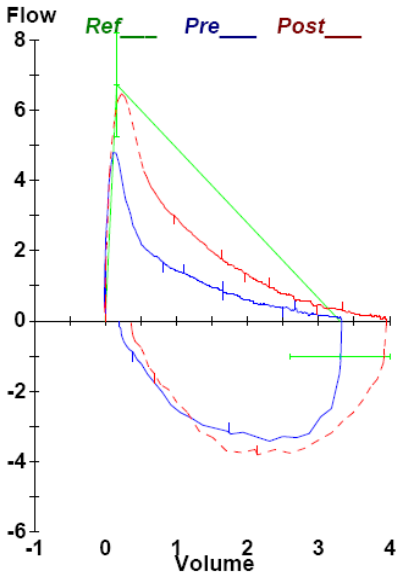
- Spirometry:

RESPIRATORY FUNCTION REPORT

Flow Vol Loops/Spirometry (ECSC)

Last bronchodilator: Ventolin > 4hrs

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
FEV1	Liters	2.83	(1.68)	(59)	2.37	84	41
FVC	Liters	3.30	3.34	101	3.96	120	18
FEV1/FVC	%	79	(50)		(60)		
FEF25-75%	L/sec	3.26	(0.84)	(26)	(1.22)	(37)	44
PEF	L/sec	6.71	(4.86)	(72)	6.48	97	33



Patient effort (1 - 10): **Patient manouevre (1 - 10):**

Comments: Bronchodilator 2 puffs of ventolin via spacer unless otherwise indicated

Western Health

What is the diagnosis
How would you treat her?
What do the guidelines say?
(Which guideline?)

Any other questions for her?

RESPIRATORY FUNCTION REPORT

Flow Vol Loops/Spirometry (ECSC)

Last bronchodilator: Ventolin > 4hrs

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
FEV1	Liters	2.83	(1.68)	(59)	2.37	84	41
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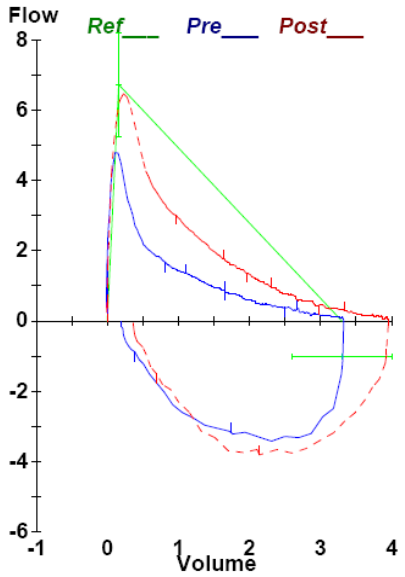
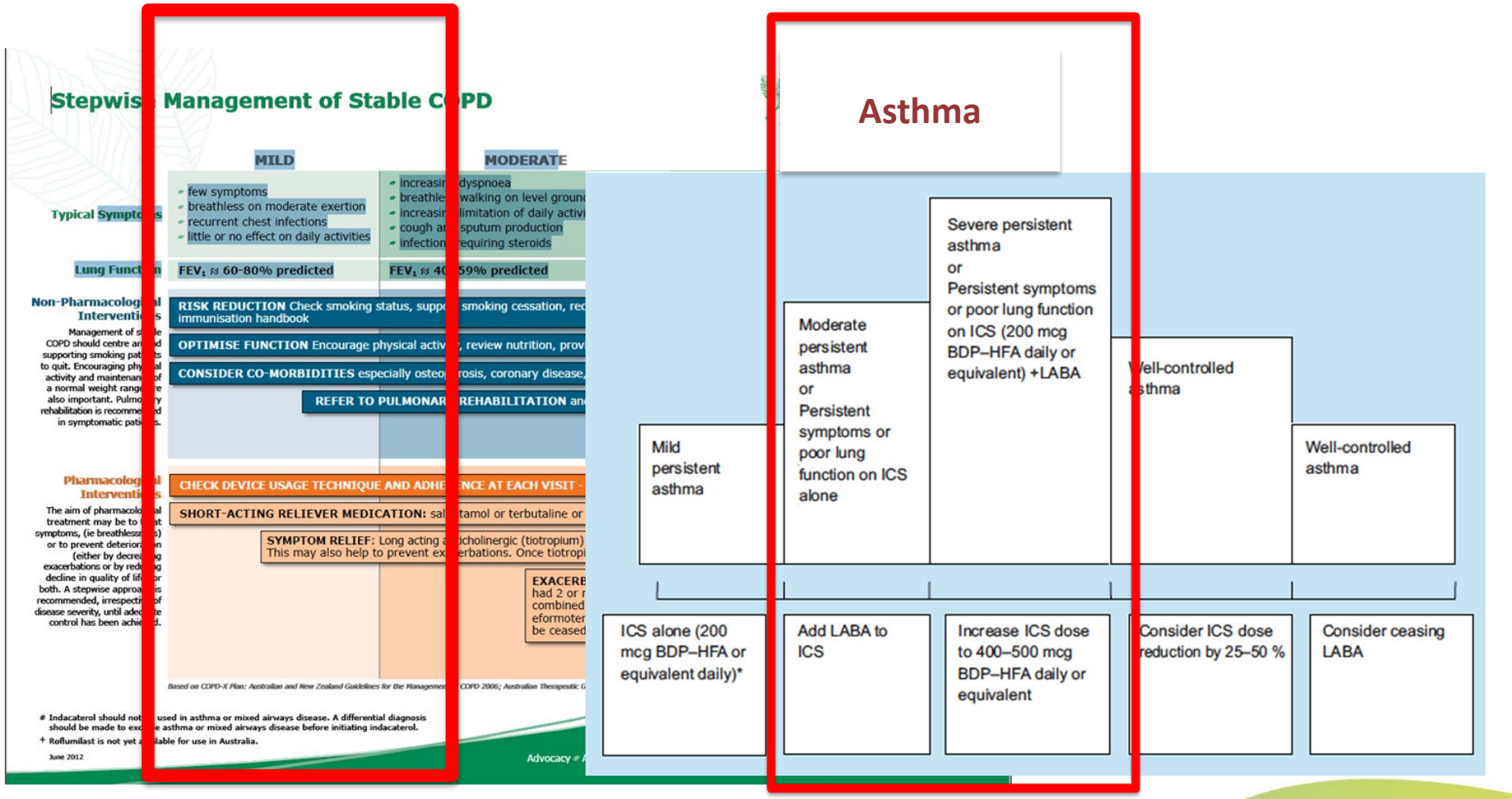


Patient effort (1 - 10): **Patient manouevre (1 - 10):**

Comments: Bronchodilator 2 puffs of ventolin via spacer unless otherwise indicated

Additional history – wheezy as a child, hay fever, sneezes with cats, chronic bronchitis 8 years (at 45), winter exacerbations past 3 years, breathlessness on moderate exertion, symptoms every day

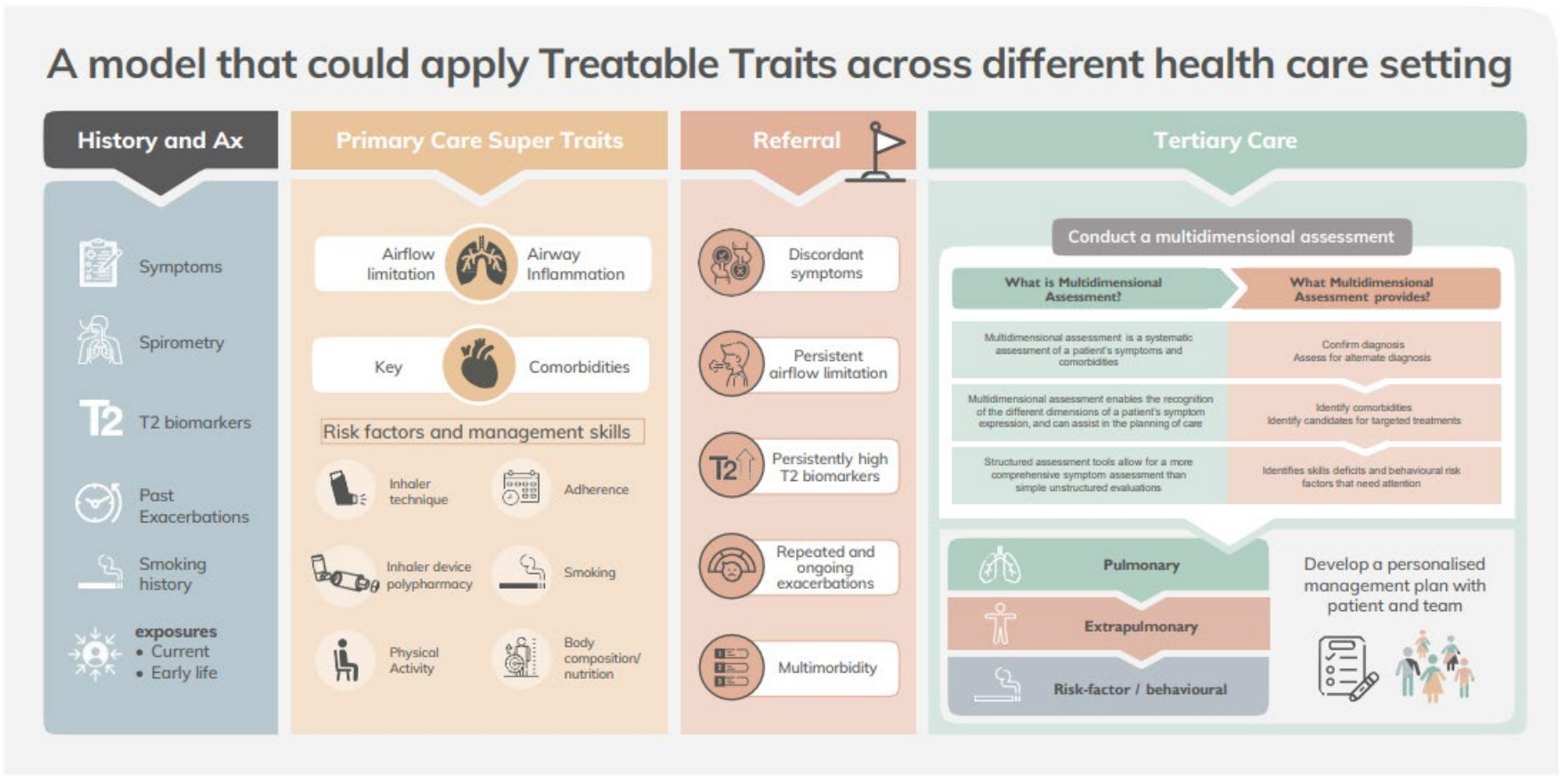
Diagnosis and severity?
Mild COPD or moderate to severe persistent asthma?



Treatable Traits approach

Western Health

Personalised medicine strategy for chronic airway diseases.
Traits must be clinically relevant, identifiable and measurable, and treatable
They may be phenotypic, endotypic and may include comorbodities and self-management skills



@traitsCRE www.treatabletraits.org.au Treatabletraits@newcastle.edu.au

centre of excellence treatable traits

Treatable traits approach works equally well in COPD

?Airways disease, not asthma or COPD

- Diagnosis
- Risk assessment – symptoms, exacerbations etc
- Comorbidities
- Exposures
- Biomarkers – eg COPD evidence for Dupilumab therapy for recurrent exacerbators with Eos 300+ (TGA but not PBS, not yet mainstream)
- For now separate guidelines remain helpful but beware overlap/ combined processes
- Over time there may be convergence of treatment approaches

RESPIRATORY FUNCTION REPORT

Flow Vol Loops/Spirometry (ECSC)

Last bronchodilator: Ventolin > 4hrs

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
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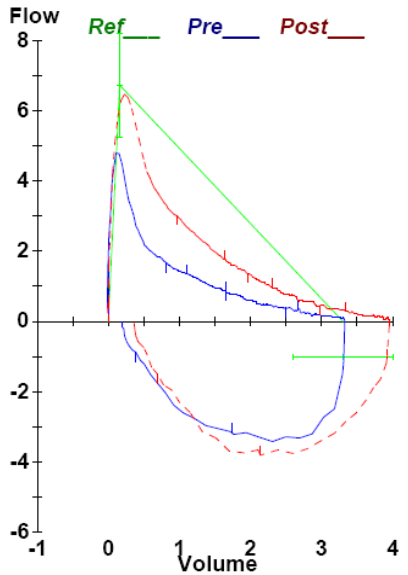

Patient effort (1 - 10): **Patient manouevre (1 - 10):**

Comments: Bronchodilator 2 puffs of ventolin via spacer unless otherwise indicated

Additional history – wheezy as a child, hay fever, sneezes with cats, chronic bronchitis 8 years (at 45), winter exacerbations past 3 years, breathlessness on moderate exertion, symptoms every day

Diagnosis ?

RESPIRATORY FUNCTION REPORT

Flow Vol Loops/Spirometry (ECSC)

Last bronchodilator: Ventolin > 4hrs

		Ref	Pre Meas	Pre % Ref	Post Meas	Post % Ref	Post % Chg
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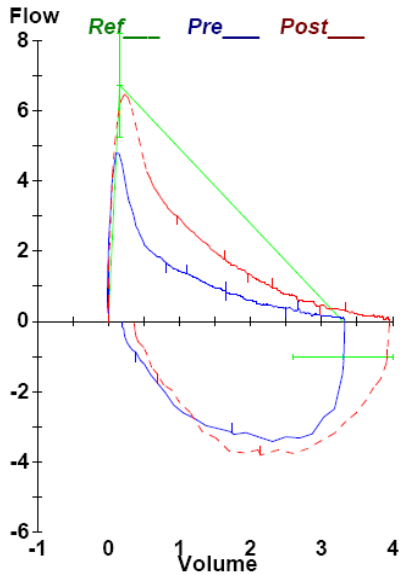

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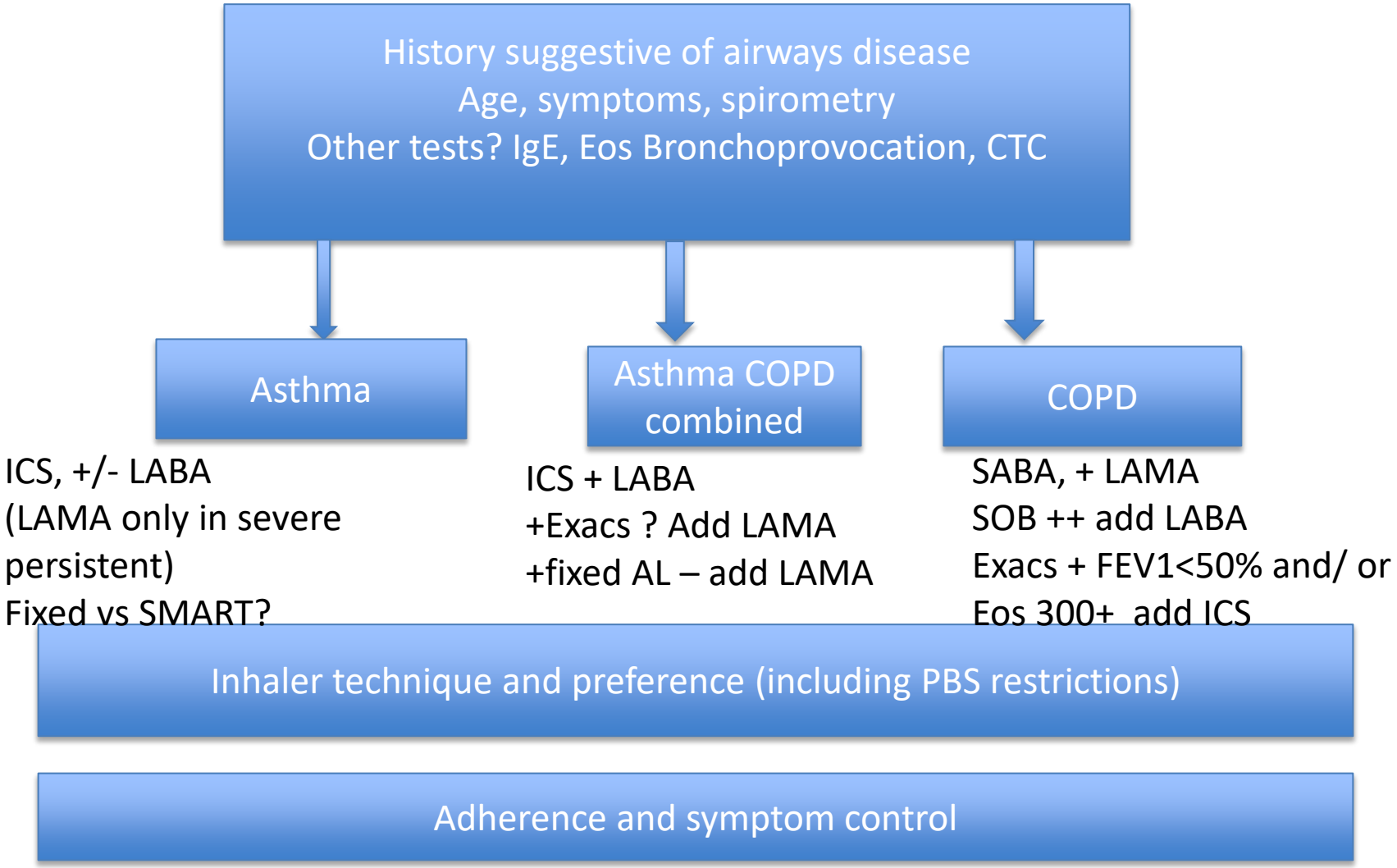
Additional history – wheezy as a child, hay fever, sneezes with cats, chronic bronchitis 8 years (at 45), winter exacerbations past 3 years, breathlessness on moderate exertion, symptoms every day

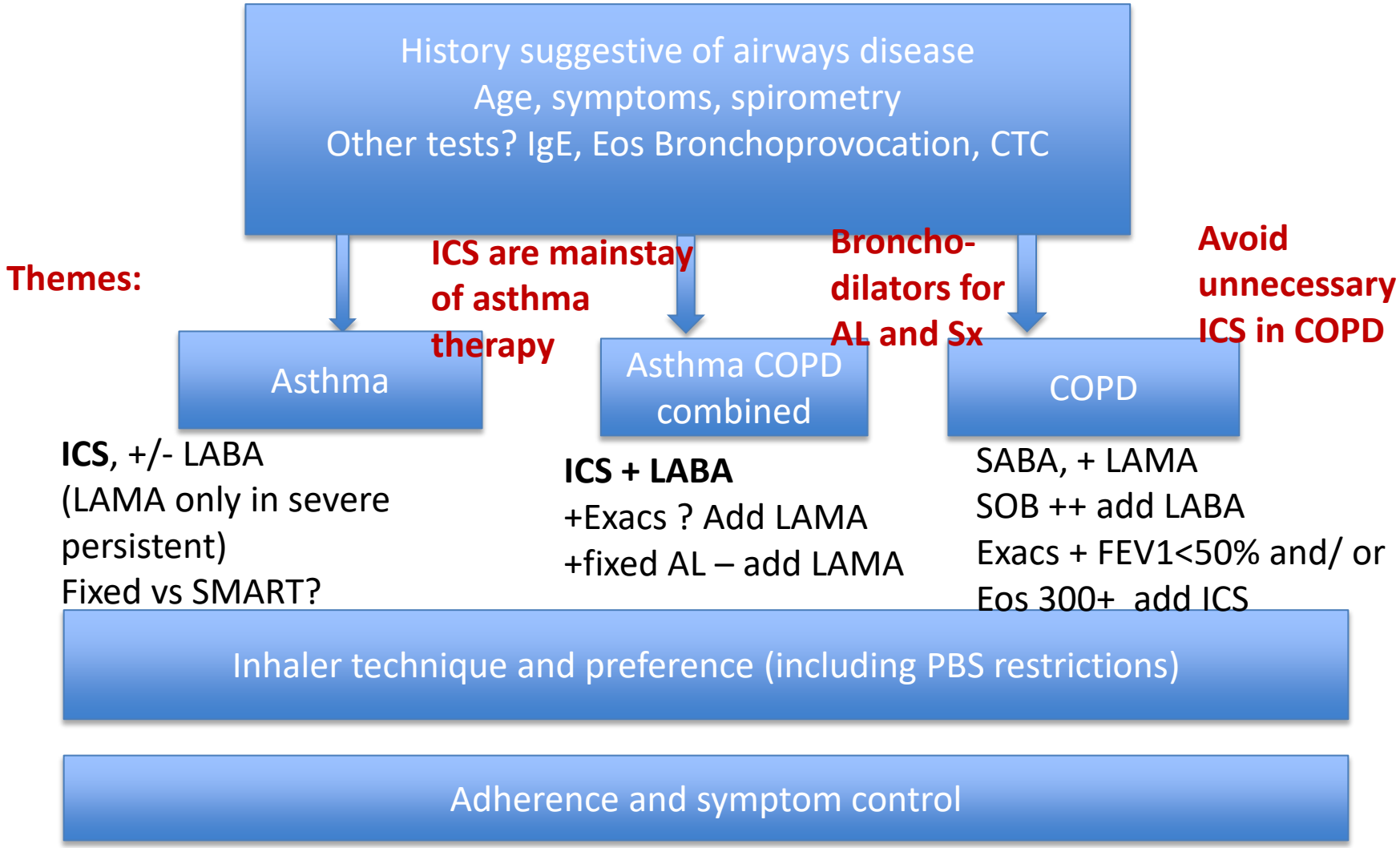
Options – Asthma with fixed airflow limitation or Combined Asthma + COPD

(My) Inhaled treatment approach

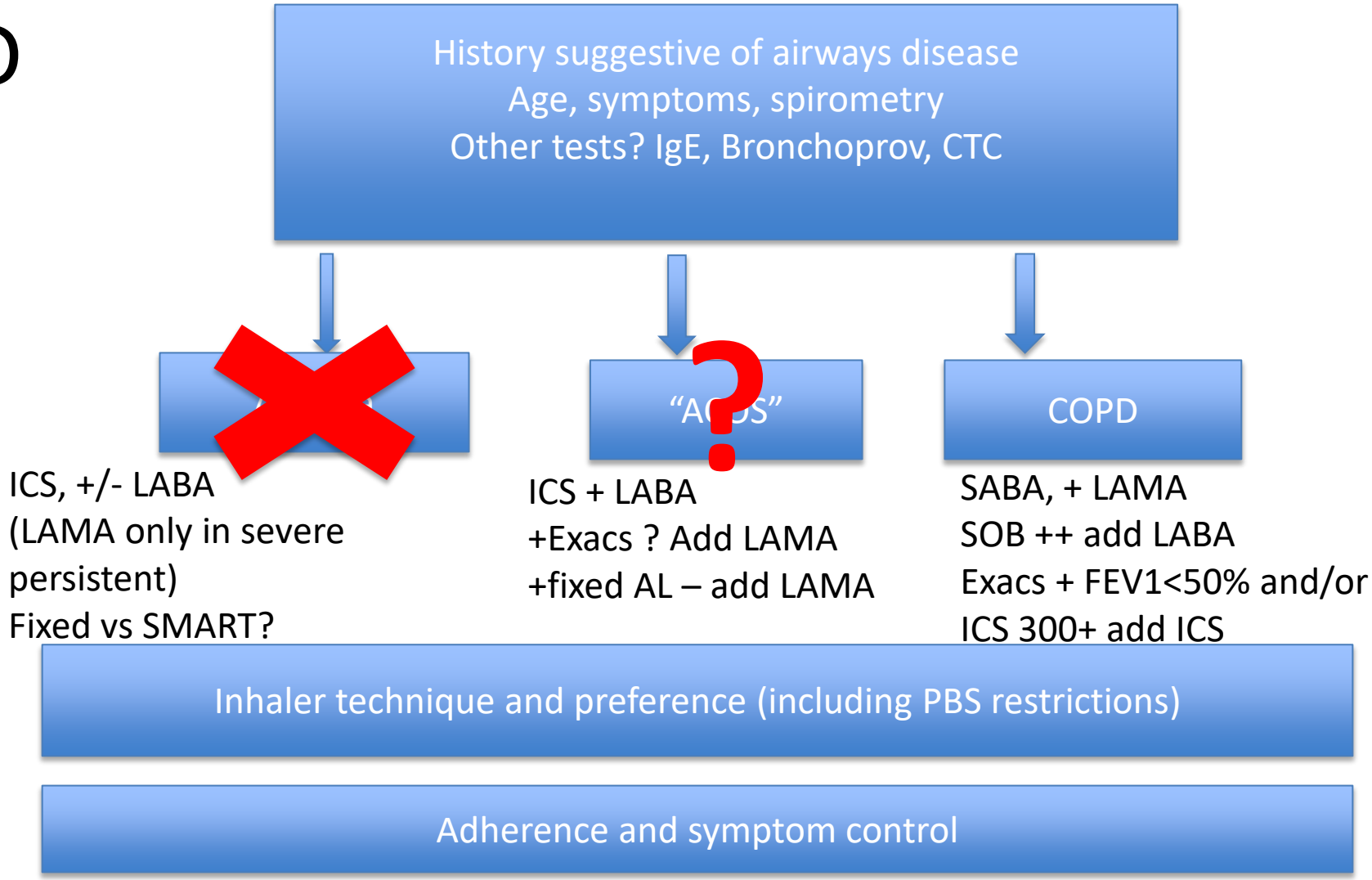
Western Health



(My) Inhaled treatment approach



(My) Inhaled treatment approach for DD



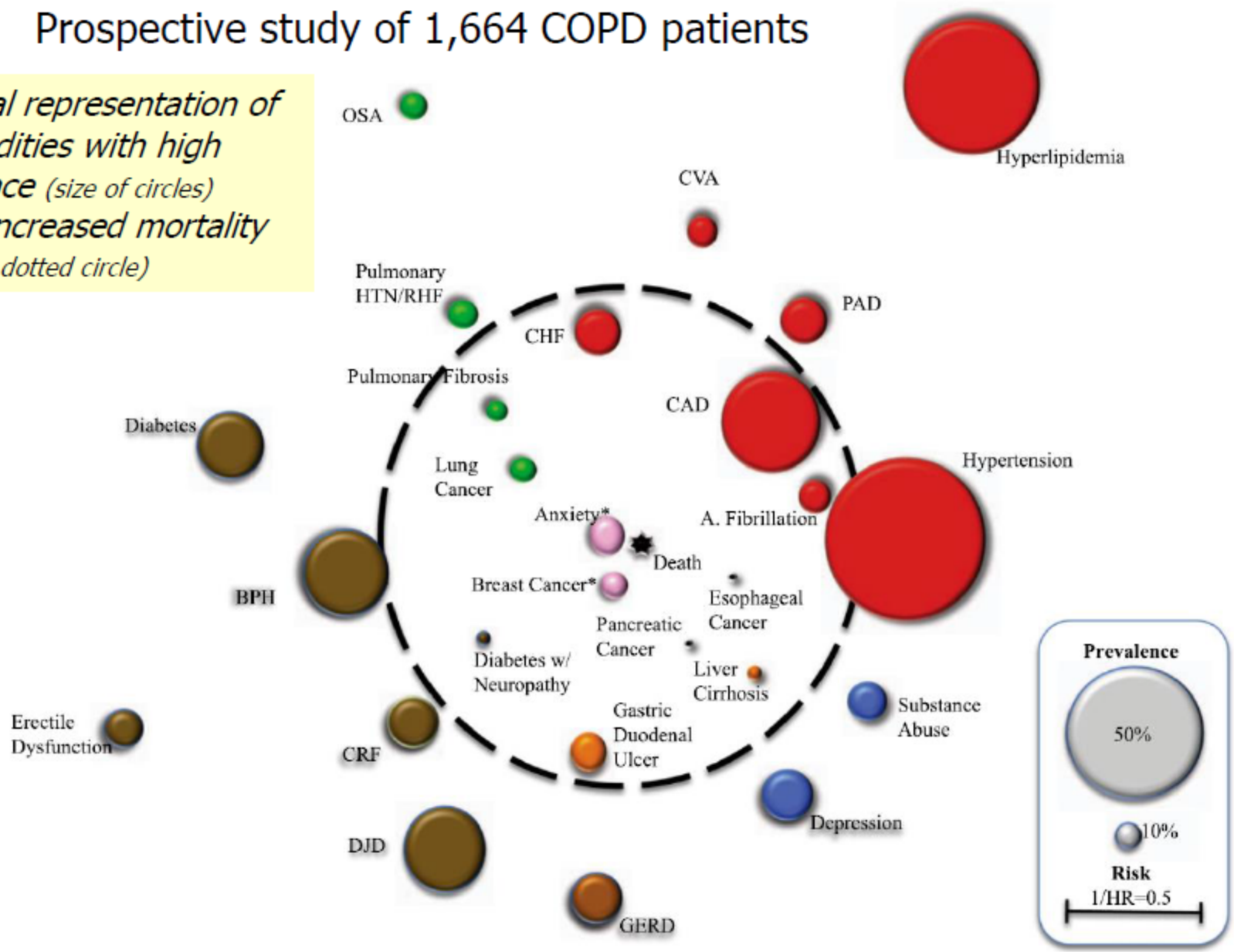
COPD Comorbidome

- Approx 86-98% of COPD patients have at least one comorbid condition
- Comorbidities are responsible for approximately one third of deaths in COPD
- CVD is responsible for over half of the hospitalisations and deaths in COPD patients
- COPD and CVD share pathophysical mechanisms
- Impact of treatments

'Comorbidome'

Prospective study of 1,664 COPD patients

Graphical representation of comorbidities with high prevalence (size of circles) and/or increased mortality (inside the dotted circle)



Dive, *et al*. Am J Respir Crit Care Med 2012;86:155-161

Important Comorbidities in COPD

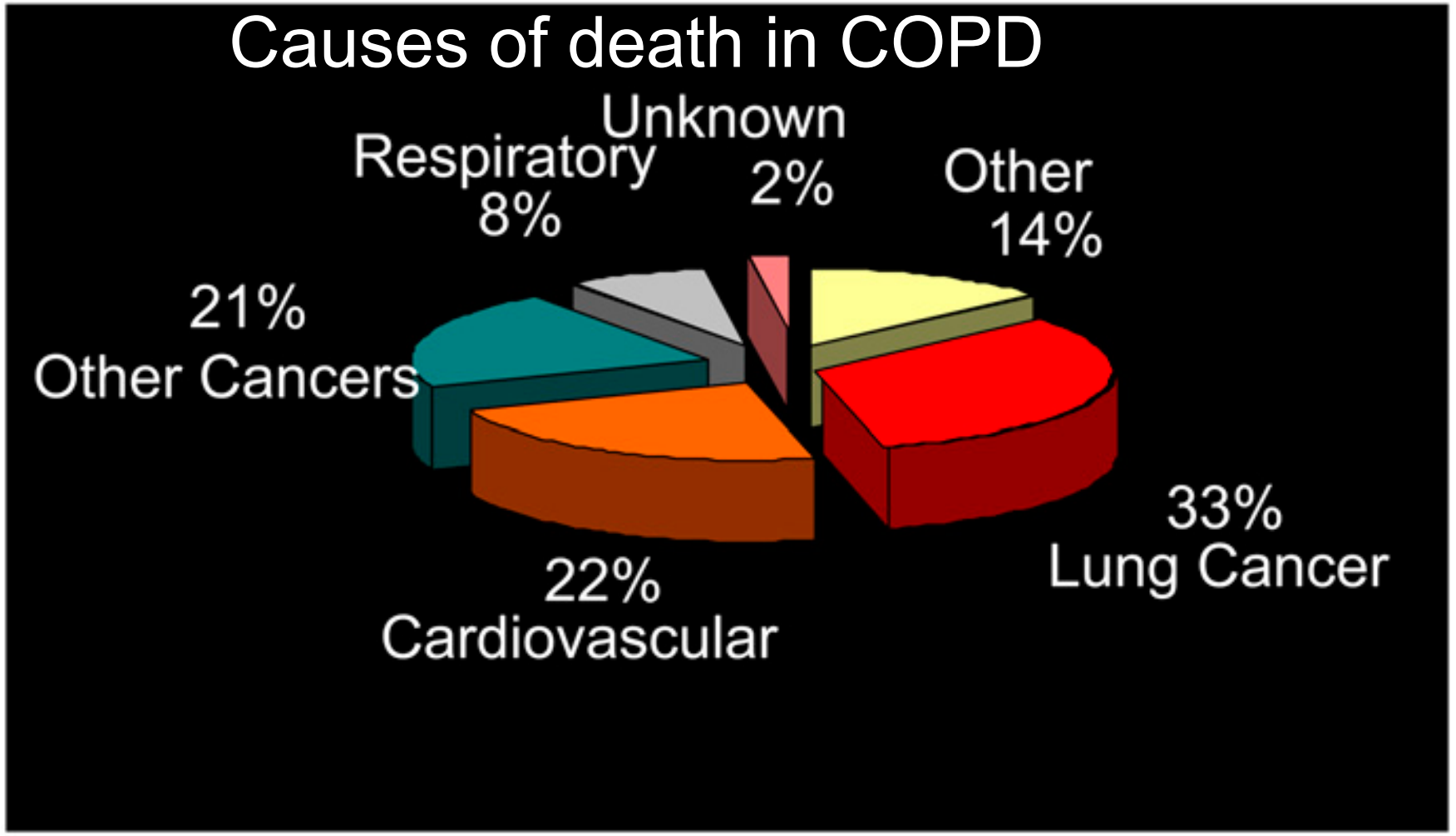


Figure 1. Specific causes of death in approximately 6,000 participants, mostly with mild-to-moderate airflow limitation, from the Lung Health Study. Anthonisen NR, Skeans MA, Wise RA, Manfreda J, Kanner RE, Connett JE.. Ann Intern Med 2005;142:233–239.

More recently: TORCH

Ascertainment of cause-specific
Mortality: Clinical endpoint committee
McGarvey LP
Thorax 2007

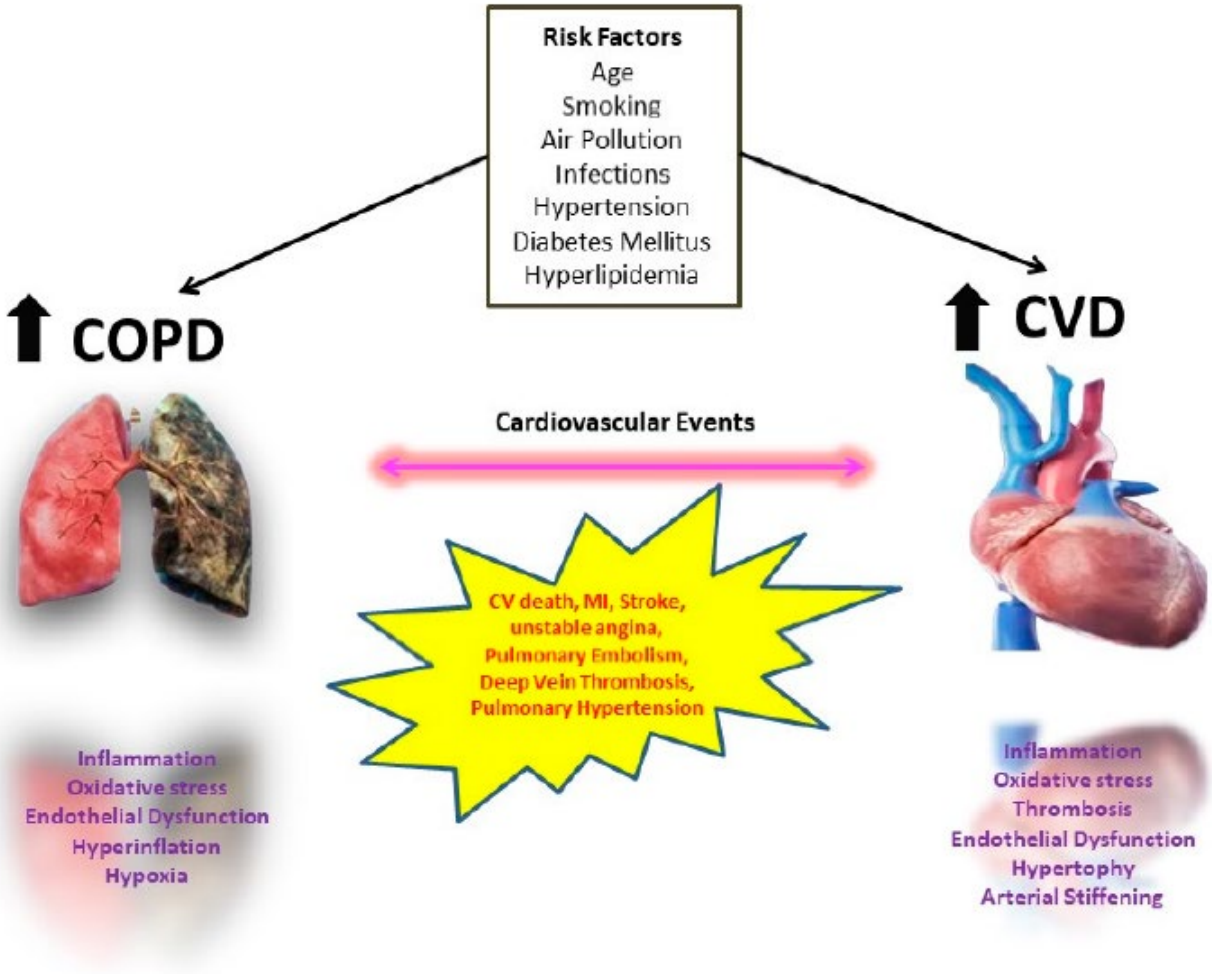
TORCH
Prospective 3 year study of mortality in COPD
FEV1<60%
RCT : placebo/ salmeterol/ fluticasone/ salmeterol-fluticasone

Even the patients with FEV1>50% had approx 20% rate of CV event at 3 years

System	%	Sub-category	%
Cardiovascular	26	CHF	3
		MI	3
		Stroke	4
		Sudden Death	16
Respiratory	35	COPD	27
		Pneumonia	8
		Other	<1
Cancer	21	Lung	14
		Other	7
Other	10		
Unknown	8		

COPD and Cardiovascular disease

- COPD and Cardiovascular diseases commonly coexist



COPD and Cardiovascular disease

Western Health

- Shared risk factors eg age, smoking, inactivity
- Symptom overlap – need to consider both
- COPD associated with chronic inflammation, also mechanical/physical effects
- AECOPD events are pro-inflammatory:
  - Excess cardiovascular events following AECOPD
  - Risk of CV adverse event increased during a moderate (HR 2.63) or severe (HR 21.8) exac and risk remains elevated for 90 days
  - Increased risk of death during severe Exac COPD (HR 41)

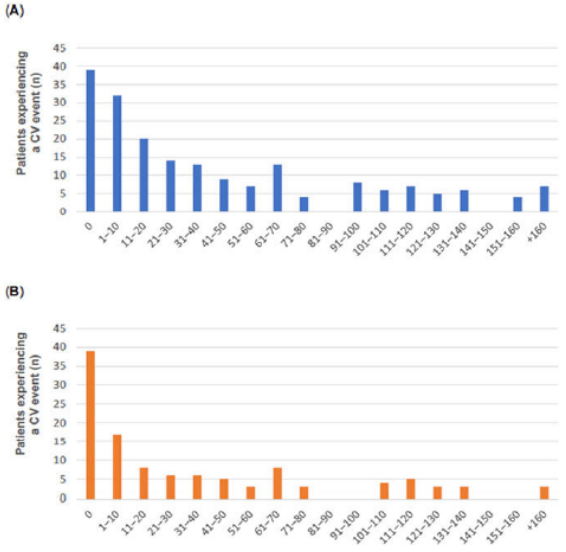


Figure 3.
Duration (days) from hospital discharge for the most recent COPD exacerbation to severe CV event (fatal/non-fatal) for (A) any exacerbations in a total of 197 patients, and for (B) severe exacerbations only in a total of 118 patients. Duration (days) from hospital discharge for the most recent COPD exacerbation. In both instances (A and B), fewer than three observations were not reported, and Day 0 indicates that both the COPD exacerbation and the CV event occurred during the same hospital stay. Duration (days) from hospital discharge for the most recent COPD exacerbation.

COPD and Cardiovascular diseases.
2-5x more likely to develop CVD

Western Health

- Heart failure
  - prevalence 7-42%, higher than general pop'n
  - higher rates of admissions for HF
  - prevalence approx. 30% in hospitalised AECOPD
  - worse prognosis
  - vice versa: COPD present in 13-39% HF patients
- Coronary artery disease
  - Prevalence 7-33% stable (some studies as high as 60%), 17-22% in admitted AECOPD
  - Increased rates AMI, hospitalization. Worse outcomes

COPD and Cardiovascular disease.

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- Arrhythmias
  - AF in 5-15%, 20-30% in severe COPD
  - Inhaled medications: Caution with very high doses of bronchodilators, Long acting bronchodilators safe
- Other : PVD, Stroke (inc risk), PH, HT most frequent comorbidity
- Therapies:
  - Cardioselective betablockers safe,
  - ACE-I and ARB may reduce exacerbations,
  - diuretics helpful,
  - anti-platelets – fewer exacs, reduced mort, better QoL
  - Statins – beneficial in COPD if statin indication (may also reduce risk of PH)

COPD and Cardiovascular disease.

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Summary

- COPD and CVD have complex mechanistic interrelationships
- The presence of COPD is associated with increased risk of CVD
- COPD and CVD worsen prognosis
- Need to optimize diagnosis and treatment of both COPD and CVD
- GPs ideally placed (and more competent) in CV risk assessment : should be routine in all COPD patients
- Consider CVD as cause or worsening dyspnea in COPD patients

And finally: Lung cancer and COPD Common risk factors

- Age >55
- Smoking history >30 pack years
- Presence of emphysema on CT
- Presence of airflow limitation (FEV1/FVC <0.7)
- FH of lung cancer
- BMI <25 kg/m_2

National Lung cancer screening program

Potential referral sources/ pathways

- WH Respiratory Referral guidelines being finalised

1. **Symptomatic patients** (not screening), evaluate for suspected lung cancer and refer as ?Lung cancer (expedited triage)
2. **Nodules identified via NLCSP**
    - By definition asymptomatic
    - NLCSP will advise – if concerning/ increasing refer as per suspected Lung cancer

3. **Other incidental findings on NLCSP** – refer eg ?ILD

4. **Incidental nodules not detected by screening programs** and other incidental findings

- We use established guidelines based on size, number, nature and patient risk factors. May receive nodule advice letter not app't

Summary

- Asthma and COPD guidelines
  - Asthma, COPD and combined Asthma + COPD
  - Increasing recognition of mechanisms and associated therapies, many choices
  - Spectrum of airway disease – ongoing review of diagnosis, therapy and response
  - Considerations of risks of the disease and risk of the therapies
  - Specialist referral for refractory and/or severe disease
- COPD risks and comorbidities
  - Cardiovascular risk assessment
  - Lung cancer risk

Questions?

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Session Conclusion

We value your feedback, let us know your thoughts.

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