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British Thoracic Society

Better lung health for all

Practical tips to delivering education in pulmonary rehabilitation

Dr Nicola Roberts  
Associate Professor  
Edinburgh Napier University




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Learning Objectives:  
To explore...

1. What health literacy is and how we can recognise poor health literacy
2. How we can adapt our delivery of education for patients
3. Measuring educational outcomes in PR
4. What tools can be used to improve the delivery of education for patients

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Health literacy

THE ELEPHANT IN THE ROOM



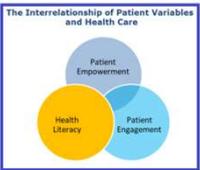
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What is health literacy?

*The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions*

The Interrelationship of Patient Variables and Health Care



Ratnan and Parker 2000 National Library of Medicine Current Bibliographies in Medicine: Health Literacy, NIH

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## Literacy

- Oral literacy – speech and speech comprehension
- Print literacy – ability to read, write and understand written language
- Functional literacy – use of literacy to perform a particular task



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## Literacy and Health



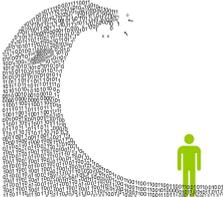
- People with limited literacy skills:
  - Report poorer overall health
  - Are less likely to make use of screening
  - Present in later stages of disease
  - Are more likely to be hospitalized
  - Have poorer understanding of treatment
  - Have lower adherence to medical regimens

Center for Health Care Strategies. Health Literacy Fact Sheets. Website. 2002. Available at: <http://www.chcs.org/resource/hl.html>.

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- Health information is not often understood by patients
- Resulting in patients knowing and understanding less about their disease<sup>(1-3)</sup> and having poorer health outcomes<sup>(4-6)</sup>
- Patients with health illiteracy have more difficulty understanding and using medication properly<sup>(2, 7,8)</sup>



1. Gazmararian et al Patient Educ Couns 2003;51:267-275
2. Williams et al Chest 1998;114:1008-1015
3. Williams et al Arch Intern Med 1998;158:166-172
4. Gazmararian et al Arch Intern Med 2000;160:3307-3314
5. Schillinger et al JAMA 2002; 288:475-482
6. Weiss et al J Am Board Fam Pract 1992;5:257-264
7. Williams et al JAMA 1995;274:1677-1682
8. Youmans SL et al Ann Pharmacother 2003;37:1726-1729

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## Shame and health literacy

- 202 African Americans underwent the TOFHLA
- 42.6% significantly impaired literacy (More likely to be elderly males with minimal high school education)
- 40% of those reported shame
- 67.2% had **never** told their spouses
- 53.4% had **never** told their children
- 19% had **never** told anyone



Parikh NS et al Pat Educ Counsel 1996;27:33-39

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## How do you think you can tell if a person has low literacy skills?

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## Red flags...



- Registration forms are filled out incorrectly or are illegible.
- Health questionnaires are skipped.
- Appointments are frequently missed.
- Repeated incidents of medication errors by the patient.
- The patient cannot name the medications they takes, is unable to explain why the medication was prescribed, or when and how to take it; T
- he patient has memorized instructions and can repeat them, but cannot answer questions i.e. when the last dose was taken.
- Patients identify their medications by opening the bottles and looking at the pills rather than looking at the label.
- Patients say they are taking their medication, but objective laboratory says otherwise
- Patients say, "Oh, I forgot my glasses," or "I want to take this [written material] home to discuss with my wife/husband/children"

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April 2012

THE EUROPEAN HEALTH LITERACY SURVEY: RESULTS FROM IRELAND.

- 20% of respondents are not fully confident in their comprehension of information they receive from their medical healthcare professional.
- 20% of respondents do not fully understand information and instructions that appear on medical packaging.
- 20% of respondents were unable to correctly identify which part of the body 'Cardiology Department' related to.
- 15% of respondents could not explain what the term 'Outpatients' meant.
- 57% of respondents said they would only sometimes seek clarification if they did not understand instructions from a healthcare professional.
- 10% of respondents admitted taking the wrong dose of medication because of failure to understand instructions.
- 66% of respondents have difficulty understanding signs and directions in Irish hospitals some of the time, 20% stated they have difficulty most of the time.
- 60% of respondents were unable to correctly define the term 'Prognosis'.

Doyle, Gerardine & Cafferkey, Kenneth & Fulham, James. (2012). The European Health Literacy Survey: Results from Ireland.

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What do you think the average reading age of the UK is?



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According to See a Voice and Content Design London: The average reading age of the UK population is 9 years – that is, they have achieved the reading ability normally expected of a 9 year old. The Guardian has a reading age of 14 and the Sun has a reading age of 8.

<https://guerrillaworking.com/2019/05/06/the-average-reading-age-is/>

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Score	Notes
90-100	Very easy to read, easily understood by an average 11-year-old student
80-90	Easy to read
70-80	Slightly easy to read
60-70	Easily understood by 15- to 16-year-old students
50-60	Slightly difficult to read
30-50	Difficult to read, best understood by college graduates
0-30	Very difficult to read, best understood by university graduates

Score	Readability (Flesch)	Notes
100.00-100.00	100 grade	Very easy to read. Easily understood by an average 7-year-old student
90.00-100.00	90 grade	Easy to read. Considered simple for consumers.
80.00-90.00	70 grade	Plain style to read.
70.00-80.00	60 & 80 grade	Plain English. Easily understood by 15- to 18-year-old students.
60.00-70.00	50 to 70 grade	Very difficult to read.
50.00-60.00	Comp 2	Difficult to read.
40.00-50.00	Comp 3	Very difficult to read. Best understood by university graduates.
30.00-40.00	Comp 4	Extremely difficult to read. Best understood by university graduates.

Readability Statistics	
Counts	
Words	1,555
Characters	8,056
Paragraphs	85
Sentences	85
Averages per Paragraph	
Sentences per Paragraph	1.0
Words per Sentence	18.2
Characters per Word	5.0
Readability	
Flesch Reading Ease	44.4
Flesch-Kincaid Grade Level	11.5

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**Hewitt committed to health reforms**

**Tuesday September 19, 2006 9:23 AM**

Health Secretary Patricia Hewitt has refused to set "artificial limits" on the extent of controversial reforms to the NHS. She said services would remain free at the point of need but added that all that mattered was getting the best for patients. Her comments came ahead of a speech on Tuesday in which she will vow to press on with "radical" reform.

"I am absolutely committed to pushing forward reforms that ensure that patients get the best possible services free at the point of need," she told the BBC Radio 4 Today programme.

Ms Hewitt went on to deny privatising the NHS, saying: "We are not privatising or marketising the NHS.

"The NHS has always used the private sector; indeed, the great majority of GPs have always been private businesses depending on profits."

Asked whether there was a limit to how far the Government would go with reforms, she said: "I don't think we should set artificial limits.

"The only thing that matters is getting the best for patients and getting the best value for the money that we've asked people to put in."

In a speech to centre-left think-tank the Institute for Public Policy Research (IPPR) later, Ms Hewitt will stress that the NHS's "core values" will never change.

She will say that recent improvements have come despite the structure rather than because of it, and drastic reform is still needed.

The minister's latest combative foray comes amid criticism that A&E units are being axed at hospitals in order to save money. It has also emerged that hundreds of NHS workers are to stage a second nationwide strike during next week's Labour Party conference

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Flesch Reading Ease 57.4  
 Flesch-Kincaid Grade Level 10.5  
 Age 16 readability

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Score	Notes
0.0-10.0	Hardly understood by an average 11-year-old student
10.0-20.0	Hardly understood by 15- to 15-year-old students
20-30.0	Best understood by university graduates

Score	Notes
100.0-100.0	Very easy to read. Easily understood by an average 7-year-old student.
80.0-100.0	Very easy to read. Easily understood by an average 10-year-old student.
60.0-80.0	Easy to read. Easily understood by an average 13-year-old student.
40.0-60.0	Fairly easy to read.
20.0-40.0	Fairly difficult to read.
0.0-20.0	Very difficult to read. Best understood by university graduates.
0.0-10.0	Extremely difficult to read. Best understood by university graduates.

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- Flesch-Kincaid Grade level 5.4
- Age 11/12
- Reading Ease 76.3
- Patient information leaflets normally written at 6<sup>th</sup>-8<sup>th</sup> grade or higher (12-14yrs) (1,2)

- Larson et al Arthritis Care Res 5, 13-16, 1992
- Bradley et al J Clin Pharm Ther 19, 7-15, 1994

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**Readability**  
 How to produce clear written materials for a range of readers

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http://learningandwork.org.uk/resources/research-and-reports/readability-how-to-produce-clear-written-materials-for-a-range-of-readers/

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**Plain English Campaign**  
 Fighting for Open-Door Communication since 1971

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http://www.plainenglish.co.uk/

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## Can all patients read?



- 127 patients with RA attending a UK Hospital clinic... **15% were functionally illiterate** (1).
- 100 COPD patients attending COPD clinic in UK hospital **15% were functionally illiterate** (2)
- 483 people with asthma attending a US hospital... **13% read at below 3<sup>rd</sup> Grade** (3)

1. Gordon et al Rheumatology 2002;41:750-754  
2. Taylor et al. ERJ 2005;26:575  
3. Williams MV et al Chest 1998 114:1008-15

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## Health literacy tests

- Word recognition tests
  - Rapid estimate of adult literacy in medicine
- Reading comprehension tests
  - Test of functional health literacy in adults (TOFHLA)

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## REALM

- Medical-word recognition and pronunciation test
- 66 words arranged in complexity
- Score 0-66
- 0-18 3<sup>rd</sup> grade (9yrs)
- 19-44 4<sup>th</sup>-6<sup>th</sup> grade (10-12yrs)
- 45-60 7<sup>th</sup>-8<sup>th</sup> grade (13-14yrs)
- 61-66 9<sup>th</sup> grade (15yrs)

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**RAPID ESTIMATE OF ADULT LITERACY IN MEDICINE (REALM)**  
Terry Davis PhD<sup>1</sup> Michael Crouch MD<sup>2</sup> Sandy Long PhD

Patient Name	Date of Birth	Examiner	Grade Completed	Reading Level
Date				
List 1	List 2	List 3		
fat	fatigue	allergic		
flu	public	migraine		
pill	jaw/ache	testicle		
disc	infection	colitis		
eye	exercise	emergency		
stress	behavior	medication		
sugar	prescription	occupation		
nerves	notify	sexually		
germs	gallbladder	alcoholism		
muscle	calculus	irritation		
disease	depression	complication		
cancer	miscarriage	gonorrhoea		
caffeine	pregnancy	inflammatory		
attack	arthritis	diabetes		
kidney	nutrition	hepatitis		
hormones	menopause	antibiotics		
herpes	appendix	diagnosis		
seizure	abnormal	potassium		
bowel	vagina	amenorrhea		
asthma	haemorrhoids	obesity		
rectal	nausea	osteoporosis		
insect	directed	impulse		

SCORE

List 1 \_\_\_\_\_

List 2 \_\_\_\_\_

List 3 \_\_\_\_\_

Raw Score \_\_\_\_\_

Page 24 © Imperial College London

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## Test of functional health literacy in adults (TOFHLA)

- Measures functional literacy levels of patients
- Numeracy and reading comprehension
- 67 items
- 50 item reading comprehension (3 prose passages) and 17 item numerical ability test
- Takes up to 20 minutes to complete
- There is also a shortened form available S-TOFHLA

Parker RM et al J Gen Intern Med 1995 ; 10:537-541

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Medscape www.medscape.com

**Item for Assessment of Literacy**

Normal blood sugar is 60-120  
Your blood sugar today is 160  
QUESTION: If this were your score, would your blood sugar be normal today?

---

**Item for Assessment of Prose Literacy**

Your doctor has sent you to have a \_\_\_\_\_ test.

a. stomach  
b. diabetes  
c. diabetes  
d. grams

You must have an \_\_\_\_\_ stomach when you come for \_\_\_\_\_.

a. asthma  
b. empty  
c. upset  
d. asthma

a. is  
b. am  
c. if  
d. it

The story will \_\_\_\_\_ from 1 to 3 \_\_\_\_\_ to do.

a. take  
b. more  
c. talk  
d. look

a. beds  
b. hours  
c. hours  
d. beds

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## Designing pulmonary rehabilitation sessions

1. Tailor to the group
2. Assess educational outcomes
3. Use resources
4. Going forward

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## Designing pulmonary rehabilitation sessions

1. Tailor to the group
2. Assess educational outcomes
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4. Going forward

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## Are we tailoring pulmonary rehabilitation to participant's needs?

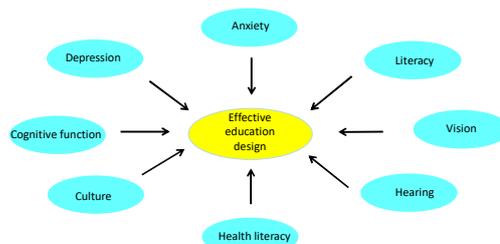
- around 15% of the population -literacy issues (1)
- Informal literacy assessment in some areas
- healthcare professionals may overestimate literacy levels (2,3)
- different learning styles such as VARK (4) educational materials should use different formats
- participants prefer a group environment with practical demonstrations of treatment strategies with models and visual aids (5)
- There may be cognitive issues in older adults
- participants felt "too tired to learn" after exercise, something that is not acknowledged in the structure of the programmes examined in this study.



1. Taylor R et al. Functional literacy amongst those with chronic obstructive pulmonary disease (COPD) *Eur Respir J*. 2005;26: 57s.
2. Dickens et al. *Journal of Health Communication*. 2013; 18: 62-69.
3. Rogers ES et al. *Cancer Control*. 2006; 13 :225-9
4. [www.vark-learn.com](http://www.vark-learn.com)
5. Wilson et al. *Archives of Physical Medicine and Rehabilitation*; 2007; 88:1704-1709

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## Create objectives tailored to learner needs

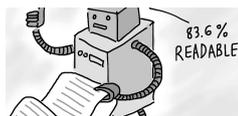


Bolton *Thorax* 2013; Spruit *AJR/CCM* 2013; PR Service specification for Commissioners

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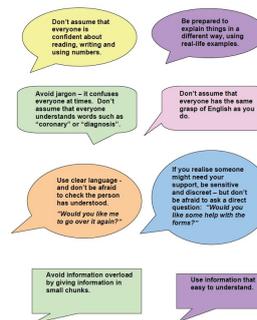
## Consider health literacy

- Use of printed resources which includes pictorial images to reinforce spoken words
- Checking patient comprehension
- Involvement of family support
- Avoidance of medical jargon and professional terms
- Use of various sources
- Having sufficient number of skilled personnel
- Written material should be tested for readability, and pictures should be of adequate size



Sadeghi *CRD* 2012; Roberts *Int J COPD* 2008; ATS 2015

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BRISTOL COPD KNOWLEDGE QUESTIONNAIRE (BRKQ)

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True False Don't know

**1. In COPD:**

a. In COPD the word "chronic" means it is severe.

b. COPD can only be confirmed by breathing tests.

c. In COPD there is usually gradual worsening over time.

d. In COPD oxygen levels in the blood are always low.

e. COPD is unusual in people less than 40 years old.

**2. COPD:**

a. More than 80% of COPD cases are caused by cigarette smoking.

b. COPD can be caused by occupational dust exposure.

c. Longstanding asthma can develop into COPD.

d. COPD is commonly an inherited disease.

e. Women are less vulnerable to the effects of cigarette smoking than men.

**3. The following symptoms are common in COPD:**

a. Swelling of ankles.

b. Fatigue (tiredness).

c. Wheezing.

d. Crushing chest pain.

e. Rapid weight loss.

**4. Breathlessness in COPD:**

a. Severe breathlessness prevents travel by air.

b. Breathlessness can be worsened by eating large meals.

c. Breathlessness means that your oxygen levels are low.

d. Breathlessness is a normal response to exercise.

e. Breathlessness is primarily caused by a narrowing of the bronchial tubes.

White Chronic Respiratory Disease 2006

- Bristol Knowledge COPD Questionnaire
  - Assesses a patient's knowledge about topics related to COPD
  - Self-administered; 15 to 20 minutes
  - 65 items with 13 categories: epidemiology and physiology, aetiology, common symptoms, breathlessness, phlegm, chest infections, exercise, smoking, immunization, inhaled bronchodilators, antibiotics, oral steroids and inhaled steroids
  - MCID: not known
  - Free to use: [roger.white4@virgin.net](mailto:roger.white4@virgin.net)

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## Education in PR: assessment

- Quizzes and tests after individual learning sessions
- Simulated scenarios
- Review of information

Blackstock Annals ATS 2018

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## Assessing impact and outcomes of education

- Quizzes and tests after individual learning sessions
- Simulated scenarios
- Review of information (use teachback)



Thi Thuy HD et al doi: 10.11124/bisrir-2016-2296  
Blackstock <https://doi.org/10.1513/AnnalsATS.201804-253WS>

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## Designing pulmonary rehabilitation sessions

1. Tailor to the group
2. Assess educational outcomes
3. Use resources
4. Going forward

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# Designing pulmonary rehabilitation sessions

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1. Tailor to the group
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### WHAT TOOLS AND RESOURCES DO PULMONARY REHABILITATION TEAMS USE TO DELIVER EDUCATION?



Topic area	Organizational resource or suggested peer-specific resources	Specific recommended CHSS resources	Local resources	Other resources
1. Medication management	CHSS	What is COPD; Living with COPD; Traffic lights; Managing breathlessness	NHS posters; Tailored PR info book	My lungs my life
2. Anatomy and physiology	CHSS	What is COPD; Living with COPD	NHS posters; Tailored PR info book	My lungs my life
3. Pharmacology	CHSS, BLP	What is COPD; Living with COPD	Local info; NHS; Summary info	Video emailed to patient afterwards; BLP; My lungs my life
4. Pathophysiology of chronic respiratory disease	CHSS, BLP	What is COPD; Living with COPD	Local info; NHS; Summary info	Picture of anatomy; video emailed to patient afterwards; My lungs my life
5. Medical tests (and interpretation)	CHSS, BLP	What is COPD; Living with COPD	Tailored PR info book	My lungs my life
6. Coping with lung disease	CHSS, BLP	What is COPD; Living with COPD	Tailored PR info book	My lungs my life; Leaflet/relaxation CD
7. Activities of daily living	CHSS, CSP		Tailored PR info book	My lungs my life; various equipment adaptations; CD leaflet
8. Energy conservation/pacing	CHSS, BLP, CSP		Tailored PR info book	My lungs my life; Energy conservation leaflet; CD leaflet; self management diary
9. Travel & Leisure activities	CHSS	What is COPD	Local resources	Leaflets; self management diary; various adaptations; My lungs my life
10. Use of inhalers/ nebulisers - technique	CHSS, BLP	Living with COPD	Tailored PR info book	Practical demonstrations; placebo devices; My lungs my life
11. Oxygen / NIV	CHSS, BLP	Living with COPD	Local resources	Practical demo; relevant publications; NHS resources
12. Early recognition of infection & treatment of exacerbations	CHSS; BLP	What is COPD; Living with COPD; Traffic lights	Local info; NHS; Summary info	Self management plan; self management leaflet; My lungs my life
13. Disease and symptom management including breathing strategies	CHSS; ACPIC	Managing breathlessness	Local; patient information leaflet	Breathing control leaflet; breathing control diary; breathing exercise booklet; Picture poster; practical demonstration
14. Indoor & outdoor pollution - smoking cessation	CHSS, BLP	What is COPD	Local smoking cessation info; Tailored PR info book	My lungs my life
15. Smoking cessation	CHSS, BLP	What is COPD	Local smoking cessation info; Tailored PR info book	Smoking cessation phone numbers
16. Chest clearance techniques	CHSS		Local info; patient information leaflet	Leaflet for good visual aids; jar of tar; smoking cessation phone numbers; NHS poster; Change and ACFT leaflet; Poster of ACFT cycle; Youtube clip; picture posters; modelling pipe device; My lungs my life; video emailed of PT demonstration
17. Benefits of exercise	CHSS		Local resources; Tailored PR info book	Exercise booklet; exercise diary; BLP exercise diary; My lungs my life
18. Strengthening exercises	ACPIC		Local resources; Tailored PR info book	Practical exercise; Breathing exercise booklet; My lungs my life
19. Breathing exercises	CHSS		Local resources; Tailored PR info book	Exercise booklet; Home exercise diary; BLP exercise diary; My lungs my life
20. Communicating with your healthcare provider	CHSS		Local resources; Tailored PR info book	Self management diary
21. Nutrition and Health food intake	NHS		Tailored PR info book	Eat well guide Nutrition in COPD; eat well poster; leaflets on gaining weight & losing weight
22. Sleep	CHSS		Tailored PR info book	Leaflet; relaxation CD

European Respiratory Journal 2020 56: 896; DOI: 10.1183/13993003.congr-2020.896

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### WHAT TOOLS AND RESOURCES DO PULMONARY REHABILITATION TEAMS USE TO DELIVER EDUCATION?



23. Sexuality	CHSS, BLP		Leaflets
24. Family role		What is COPD	in house energy management checklist; Tailored PR info book
25. Home adaptation		What is COPD	role of OT; self management diary
26. End of life decisions			Leaflets; national document; ACP available to look at; Video emailed
27. Advance directives			Leaflets; national document
28. Anticipatory care planning			Leaflets; national document; national tool; ACP available to look at; Video emailed
29. Swallowing & COPD (swallow screening)			local
30. Benefits system and welfare rights			local leaflet from SLT colleagues
31. Support groups	CHSS		local leaflets
32. Psychological impacts and minimising their effects			Information on cheerful Chesters info on BLP support group; poster and handouts
33. Anxiety and panic control (relaxation & stress management)	CHSS		Tailored PR info book
34. How to equip the individual to improve confidence	CHSS		Information on cheerful Chesters info on BLP support group; poster and handouts
35. Identifying and changing beliefs and behaviour	CHSS	What is COPD; Traffic lights	Anxiety management leaflet; relaxation CD; coping with stress CD; neuropsychology/relaxation square breathing
36. Depression and mood	CHSS		My lungs my life; Relaxation CD
37. Self management	CHSS	Traffic lights	My lungs my life; Relaxation CD
38. Action plan for exacerbations	CHSS	Traffic lights	My lungs my life; Relaxation CD
39. Goal setting	CHSS	What is COPD; Traffic lights	My lungs my life; Relaxation CD
40. Making a change plan	CHSS	Traffic lights	My lungs my life; Relaxation CD

European Respiratory Journal 2020 56: 896; DOI: 10.1183/13993003.congr-2020.896

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### WHAT TOOLS AND RESOURCES DO PULMONARY REHABILITATION TEAMS USE TO DELIVER EDUCATION?




European Respiratory Journal 2020 56: 896; DOI: 10.1183/13993003.congr-2020.896

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<https://www.respelearning.scot/>



**RESpe**  
RESPIRATORY EDUCATION TO SUPPORT PROFESSIONALS THROUGH E-LEARNING

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Respiratory Education to Support Professionals through eLearning  
RESpe is a free, interactive, e-learning resource which provides a basic knowledge of common respiratory conditions. The aim of the resource is to improve patient/care care by increasing the knowledge and skills of any member of health and social care staff working with people living with respiratory conditions in health, social or private care settings.

Intended users are:

- Staff and students who are new to working with respiratory patient/care.
- Staff who wish to refresh or expand existing respiratory knowledge.
- Staff who have a mixed caseload which includes some respiratory patient/care.
- Staff working in the private sector who have limited access to specific respiratory training.

RESpe has been developed in collaboration with NHS Scotland respiratory clinicians, Chest Heart & Stroke Scotland and the University of Edinburgh Digital Learning Applications & Media team as part of our e-learning for chronic, heart and stroke conditions. RESpe was funded by the Scottish Government and aligns with the National Clinical Strategy for Scotland, Public Health and is supported by the National Advisory Group for Respiratory MDUs and Chest Heart & Stroke Scotland's New Life Half-Lived strategy.

**Anatomy and Physiology**

In this section you will see interactive anatomical diagrams which show the structure within the lungs from the trachea down to the smallest airways. The chest wall and the muscles involved in breathing.

**Assessment and common lung diseases**

In this section you will learn about what happens during a basic respiratory assessment. Even if you are not familiar with some of the words from within the questions, they will help you to identify what patients/care for any changes to their respiratory health and how their symptoms.

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## Designing pulmonary rehabilitation sessions

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1. Tailor to the group
2. Assess educational outcomes
3. Use resources
4. Going forward

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## Designing pulmonary rehabilitation sessions

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1. Tailor to the group
2. Assess educational outcomes
3. Use resources
4. **Going forward**

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### Going forward - Things to think about for your education sessions – changing / improving practice

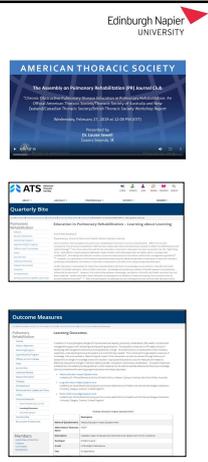
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- Do not assume literacy skills!
- Assessment of learning needs – individual, group, measurement of self-efficacy
- Interactive lecturing
- Embed demonstration techniques - use of inhalers, breathing strategies, chest clearance, breathing and strengthening exercises.
- Use aids, posters, models, videos to supplement your education
- Use motivational interviewing
- Use peer observation/participation
- Implement group discussions/activities
- Provide alternative resources i.e. handouts – check for literacy
- Use of printed resources which includes pictorial images to reinforce spoken words
- Checking patient comprehension
- Involvement of family support
- Avoidance of medical jargon and professional terms
- Use of various sources
- Having sufficient number of skilled staff
- Written material should be tested for readability, and pictures should be of adequate size

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## Resources

- ATS PR Assembly Journal club webinar:  
Blackstock et al. "Chronic obstructive pulmonary disease education in pulmonary rehabilitation. An official American thoracic society/thoracic society of Australia and New Zealand/Canadian thoracic society/british thoracic society workshop report." *Annals of the American Thoracic Society* 15.7 (2018): 769-784:  
<https://www.thoracic.org/members/assemblies/assemblies/pr/journal-club/chronic-obstructive-pulmonary-disease-education.php>
- Summary of above paper:  
<https://www.thoracic.org/members/assemblies/assemblies/pr/quarterly-bite/education-in-pulmonary-rehabilitation-learning-about-learning.php>
- Information on outcome measures:  
<https://www.thoracic.org/members/assemblies/assemblies/pr/outcome-measures/learning-outcomes.php>



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## Any Questions?



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