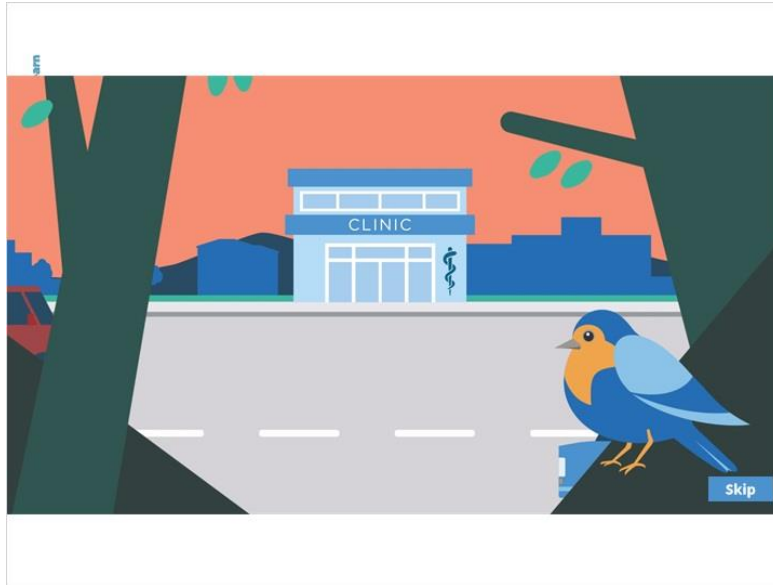


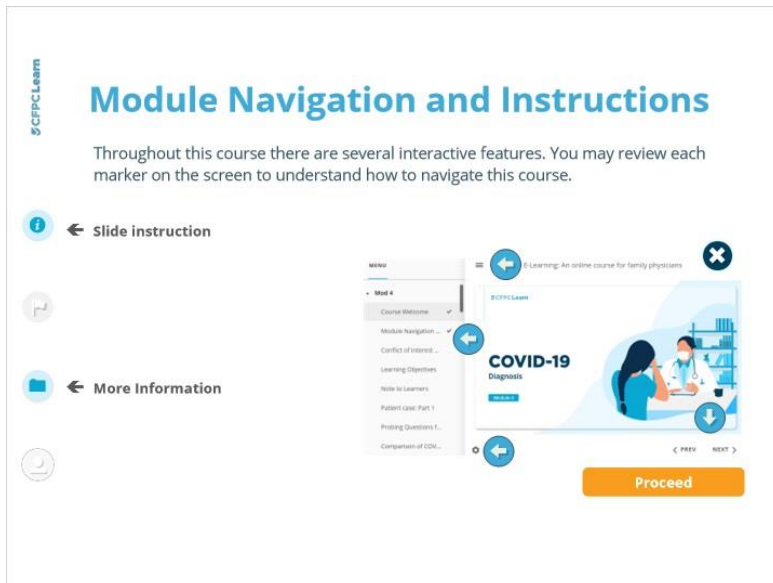
Case 32_Brea Salter

1. Conflicts

1.1 Intro Video



1.2 Module Navigation and Instructions



1.3 Learning Objectives

CFPC Learn

Learning Objectives

At the end of this module participants should be able to:

1. Identify key factors/findings in family medicine to help establish common clinical diagnoses.
2. Evaluate best evidence/guidance and practice tools to determine preferred treatment options for patients.
3. Synthesize patient preference, evidence and experience to formulate comprehensive plans for patient cases.

Approximately 15 minutes to complete each patient case.

Proceed

2. Brea Salter

2.1 Brea Salter

CFPC Learn


Brea Salter, 4

Brea Salter is a 4 year old girl brought in by her dad. A couple of weeks ago, Brea had an episode of wheezing which lasted a few days and resolved on its own.

Brea has had a previous wheezing episode (at age 18 months) and was diagnosed with bronchiolitis at that time. Brea's dad has a history of asthma.

Conversation History

Moving Forward



History (Slide Layer)

The screenshot shows the 'History' slide layer of an interactive story. On the left, a vertical sidebar contains the 'SCFCLearn' logo and four navigation icons: a blue circle with an 'i', a blue circle with a right-pointing arrow, a blue circle with a left-pointing arrow, and a blue circle with a refresh symbol. The main content area features the title 'Brea Salter, 4' in blue. Below the title, a light blue box contains the text 'Brea has eczema and has been using hydrocortisone 1% off and on.' with a small 'x' icon in the top right corner. A yellow speech bubble from the character Brea says, 'Father: Does she have asthma like I do?'. A blue speech bubble from the narrator says, 'The chances are pretty good that she does, unfortunately!'. At the bottom of the content area are two dark blue buttons labeled 'Conversation' and 'History', and an orange button labeled 'Moving Forward'. On the right side of the slide, there is a full-body illustration of a young girl with dark hair in pigtails, wearing a yellow shirt with a heart and blue overalls, standing against a light blue background.

Conversation (Slide Layer)

The screenshot shows the 'Conversation' slide layer of the same interactive story. The sidebar and title 'Brea Salter, 4' are identical to the previous slide. The main content area features a blue speech bubble from the narrator saying, 'Hi Brea, you sure have gotten tall! What happens when you run around with your friends?'. A yellow speech bubble from the character Brea says, 'Sometimes I cough a lot.'. At the bottom of the content area are two dark blue buttons labeled 'Conversation' and 'History', and an orange button labeled 'Moving Forward'. On the right side of the slide, there is a full-body illustration of the same young girl character as in the previous slide.

2.2 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

Which of the following statements is most accurate about the diagnosis of asthma in preschool children?

Click all that apply.

- A. The diagnosis cannot be made in children <6 yo because they cannot do spirometry.
- B. Parental reports of wheezing can be used for diagnosis.
- C. One or more episode(s) of wheezing, breathlessness and cough is strongly suggestive of asthma.
- D. Diagnosis can be made after symptom improvement is observed with beta agonist (by clinician or parent).
- E. Parental asthma, atopy or exercise induced symptoms are suggestive of asthma.

Submit

2.3 Review

Review

Answer: Tricky question!
A and C are correct.

- Spirometry**
- FEV1/FVC**
- Diagnosis**
- Associated Conditions**
- Reversibility**



Click on the buttons to view additional information

Moving Forward

Formal trials (Slide Layer)

SCFCLearn

Review



Answer: Tricky question!
A and C are correct.

Spirometry

FEV1/FVC

Diagnosis

Associated Conditions

Reversibility

Formal trials establishing accuracy of parental report have not been done. To assess reversibility in a wheezing child, the clinician can check:

- 30 min after salbutamol 4 puffs, OR
- Next-day status after prednisone 1 mg/kg daily



In historically wheezing child, a 3-month trial of:

- 2 puffs salbutamol PRN OR
- Medium dose inhaled corticosteroid with salbutamol PRN

Associated conditions (Slide Layer)

SCFCLearn

Review



Answer: Tricky question!
A and C are correct.

Spirometry

FEV1/FVC

Diagnosis

Associated Conditions

Reversibility



Associated conditions that suggest diagnosis of asthma:

1. Atopic dermatitis/food allergy. Asthma develops in 80% of people with atopic dermatitis and 30% with food allergies.
2. Parental history. Odds ratio (OR) of having asthma with one parent: OR = 2.6; two parents: OR = 5.2
3. Exercise induced bronchospasm presents in up to 90% of children with asthma.

Diagnosis (Slide Layer)

SCFCLearn

Review



Answer: Tricky question!
A and C are correct.

The CTS and CPS developed a guideline in 2015. Diagnosis of probable asthma in children 1-5 years old requires :

- I. Airflow obstruction**
 - Frequent (8 days/month) asthma-like symptoms (breathlessness, wheezing) or recurrent (≥ 2) episodes with asthma-like signs.
 - Clinician detection of wheezing or convincing parent-reported symptoms
- II. Reversibility** (one or both) – after short acting bet-agonist observed by clinician (preferred) or parent and/or improvement after a 3-month trial of inhaled corticosteroids.
- III. No other diagnosis more likely.**

Spirometry

FEV1/FVC

Diagnosis



Associated Conditions

Reversibility

Spirometry (Slide Layer)

SCFCLearn

Review



Answer: Tricky question!
A and C are correct.

The teaching has been that asthma can only be accurately diagnosed with spirometry. However, asthma develops before 6 years of age and these children usually cannot perform spirometry reliably. Other criteria are needed for diagnosis and the diagnosis can be confirmed with spirometry once the child reaches 6 years of age.

From: Canadian Thoracic Society (CTS) and Canadian Pediatric Society (CPS)

Spirometry

FEV1/FVC

Diagnosis

Associated Conditions


Reversibility

Moving Forward

FEV/FVC (Slide Layer)

SCFPCLearn

Review



Answer: Tricky question!
A and C are correct.

Spirometry Diagnosis in children over six years of age based on spirometry:

FEV1/FVC • FEV1/FVC below 80-90% in age matched children

Diagnosis • Evidence of reversibility (12% improvement after beta-agonist)

Associated Conditions

Reversibility

Moving Forward

2.4 Brea Salter

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Brea Salter, 4

Father: How can I tell if she has asthma? Couldn't this just be bronchiolitis like her sister, Aira?

On examination today, Brea is feeling well and has no wheezes. She has a bit of eczema on her right antecubital fossa.

Comparison **Conversation**

Moving Forward



History (Slide Layer)

SCFPCLearn

Brea Salter, 4

You mentioned that she had been wheezing a couple of times?

Father: Yes, it sounded like it to us. She sure coughs a lot, though- I read that a lot of coughing can also be asthma.

Comparison Conversation

Moving Forward


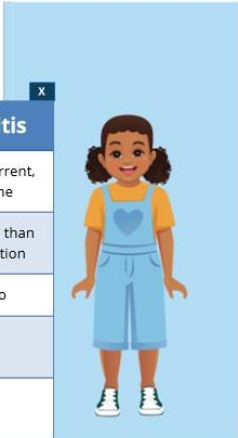


Chart (Slide Layer)

SCFPCLearn

Brea Salter, 4

	Asthma	Bronchiolitis
Context	Recurrent, not always viral prodrome, exercise	Not usually recurrent, Viral prodrome
Associated Conditions	Atopy - parent/patient	Atopy - No more than general population
Age	Any	Usually <2 yo
Response to bronchodilators	Yes	No
Response to inhaled corticosteroids	Yes	No





2.5 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

CFPCLearn

Cough variant asthma is a well validated asthma variant.



True or False

True



False

Submit

2.6 Review

CFPCLearn

Review



Answer: The correct answer is false.

Cough Variant

Cough & Wheezing

Non-specific cough



Click on the buttons to view additional information

Moving Forward

Non-specific cough (Slide Layer)

SCFPCLearn

Review



Answer: The correct answer is false.

Cough Variant

Cough & Wheezing

Non-specific cough



Treatment of non-specific chronic cough differs from asthma. Cochrane reviews do not support use of beta agonists or anticholinergics for non-specific chronic cough. There is conflicting evidence for effectiveness of inhaled steroids for chronic cough.

Moving Forward

cough/wheeze (Slide Layer)

SCFPCLearn

Review



Answer: The correct answer is false.

Cough Variant

Cough & Wheezing

Non-specific cough


- In an observational study of children with recurrent cough, with and without wheeze:
 - Cough with wheeze was likely to be asthma: children with cough and wheeze had more atopy, reduced expiratory flow and increased reactivity to cold air challenge
 - Cough without wheeze: these children do not differ from asymptomatic children in measures of atopy, airway responsiveness or lung function.

Moving Forward

Cough Variant (Slide Layer)

SCFPCLearn

Review



Answer: The correct answer is false.

- Cough Variant
- Cough & Wheezing
- Non-specific cough

"Cough variant asthma" has not been validated as a true form of asthma. Wheezing, airway restriction and breathlessness are the hallmark signs and symptoms of asthma.

Moving Forward


2.7 Brea Salter

SCFPCLearn

Brea Salter, 4

Father: I really would like to do something for Brea. But I want to be sure it is asthma.

For sure, it is important to have the right diagnosis!





Moving Forward

2.8 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

SCFPCLearn

Which of the following statements is the most accurate? (Choose all that apply)





- Treating pre-schoolers with suspected asthma improves lung function.
- Overdiagnosis of asthma is common.
- Pre-schoolers represent the minority of emergency visits for asthma exacerbations.
- The term "happy wheezer" can be applied to asthma.
- Failure to improve after 3-month trial of therapy should prompt further investigation.

Submit

2.9 Review

SCFPCLearn

Review



- Treatment
- Overdiagnosis
- Preschoolers
- >6 years: Confirm



Click on the buttons to view additional information

Moving Forward

confirm (Slide Layer)

SCFPCLearn

Review





- Treatment**
- Overdiagnosis**
- Preschoolers**
- >6 years: Confirm**

In a study of children 6-18 years old classified clinically as having asthma, only 16% had confirmation on spirometry. Therefore, once a child is old enough, it is important to confirm the diagnosis of asthma with spirometry.

Preschoolers (Slide Layer)

SCFPCLearn

Review



- Treatment**
- Overdiagnosis**
- Preschoolers**
- >6 years: Confirm**



Preschoolers with asthma-like symptoms have the highest rate of ER visits and admissions.

Wheezing in early life has been associated with reduced lung function at 6 years of age and beyond.

Overdiagnosis (Slide Layer)

SCFPCLearn

Review



- Treatment
- Overdiagnosis**
- Preschoolers
- >6 years: Confirm

Overdiagnosis occurs with:



- Diagnosing “cough variant asthma”
- Diagnosing with a single asthma-like episode (if <2 years of age, likely bronchiolitis)
- Trial of steroids for chronic respiratory symptoms that does not result in improvement. In these cases, it is recommended to stop the trial of steroids and explore other diagnoses.

Moving Forward

Treatment (Slide Layer)

SCFPCLearn

Review



- Treatment
- Overdiagnosis**
- Preschoolers
- >6 years: Confirm

In a systematic review of children (1-5 years old) with a clinical diagnosis of wheezing or asthma for ≥ 6 months, treatment with inhaled corticosteroids (treatment duration: average 12 weeks):

- Reduced wheezing episodes (18% versus 32% placebo)
- Reduced albuterol use, and increased FEV₁ by 70 ml
- Improved function

Wheezing in severely affected toddlers is associated with airway remodelling.

Moving Forward

2.10 Brea Salter


CFPC Learn

Brea Salter, 4

Father: So, what do you think is going on, doc?

Brea may have asthma but the best way to know is by sending her for a spirometry test. But this test is done when kids are older, at least six years old. Right now, I can prescribe a puffer. If Brea gets wheezy again, give her the puffer and see if this helps with her symptoms.

Moving Forward



2.11 Create a Plan


CFPC Learn

Let's Make a Plan

Using what you have learned write a plan for Brea. It can include any/all of the following: lifestyle intervention(s), prescription intervention(s), lab(s)/test(s) required, follow up appointment time frame, and referral required.

Fill in your plan for the patient here

See how your plan compares



2.12 Plan Answers

Brea Salter

This is the proposed plan for Brea. How does your plan compare?

Documenting
Medication
Follow Up

Select details on the left to see suggested recommendations

What's in a name? Moving Forward

Name (Slide Layer)

Brea Salter

This is the proposed plan for Brea. How does your plan compare?

Documenting
Medication
Follow Up

Meaning Behind the Name:
"Brea" is taken from the word 'breath.'
The last name Salter is a nod to Dr. Henry Hyde Salter who described clinical asthma in the 1800s.

What's in a name? Moving Forward

Follow Up (Slide Layer)

The screenshot shows a slide layer titled "Brea Salter" with a patient avatar and a balance scale icon. The text reads: "This is the proposed plan for Brea. How does your plan compare?". On the left, there are three blue buttons: "Documenting", "Medication", and "Follow Up". Below them is a green button labeled "What's in a name?". On the right, a light blue box contains a speech bubble icon and the text: "Follow-up if any wheezing episodes occur. Otherwise, return to clinic in 3 months." At the bottom right is an orange button labeled "Moving Forward".

Medication (Slide Layer)

The screenshot shows a slide layer titled "Brea Salter" with a patient avatar and a balance scale icon. The text reads: "This is the proposed plan for Brea. How does your plan compare?". On the left, there are three blue buttons: "Documenting", "Medication", and "Follow Up". Below them is a green button labeled "What's in a name?". On the right, a light blue box contains a speech bubble icon and the text: "You prescribe salbutamol 1-2 puffs q4-6h PRN for wheezing. You also prescribe an aerochamber. On the prescription, you ask the pharmacist to counsel Brea's dad on how to use the puffer and aerochamber." At the bottom right is an orange button labeled "Moving Forward".

Documenting (Slide Layer)

The screenshot shows a slide layer titled "Brea Salter" with a circular profile picture of a young girl. On the left is a vertical navigation menu with icons for Home, Back, Forward, and a search icon. The main content area has the text "This is the proposed plan for Brea. How does your plan compare?" and three blue buttons: "Documenting", "Medication", and "Follow Up". A light blue callout box with a magnifying glass icon contains the text: "You ask Brea's dad to start a diary documenting rescue salbutamol use, daytime and nighttime symptoms, absenteeism from usual activities, and exacerbations requiring unscheduled medical visits." At the bottom left is a green button labeled "What's in a name?" and at the bottom right is an orange button labeled "Moving Forward".

3.1 References

The screenshot shows a slide layer titled "References" with a circular profile picture of the same young girl. On the left is a vertical navigation menu with icons for Home, Back, Forward, and a search icon. The main content area has the text "Thanks for visiting the clinic!" followed by "References are available [here](#)." Below that, it says "This activity is eligible for up to 0.25 Mainpro+ credits."