

Myles Tension

1. Myles Tension

1.1 Meet Myles Tension

The screenshot shows a patient profile for Myles Tension. On the left is a vertical sidebar with the 'CFPCLearn' logo and several icons. The main content area has the title 'Myles Tension' and a text box containing: 'Myles had elevated blood pressure at his last CFPCLearn Clinic visit (BP = 161/97). Of note, Myles had a birthday last week. He is now 43 years old.' Below the text are two tabs: 'Myles' (selected) and 'Recommendations'. At the bottom right is an orange 'Moving Forward' button. On the right side of the screen is a full-body illustration of Myles, a man with glasses and a beard, wearing a green sweater and blue pants, with a speech bubble icon above his head.

Myles 1 (Slide Layer)

This screenshot is identical to the previous one but with a slide layer open. The slide layer is a light orange box with a close button (X) in the top right corner. It contains a message from Myles: 'Hey Doc! I did those home readings you asked for. I printed out a copy for you.' Below the message is a text block: 'You see that the average of his home readings was 164/82 with more than 90% over 140/90. His office measure was 168/105'. The 'Myles' tab is still selected, and the 'Moving Forward' button is visible at the bottom.

Recommendations (Slide Layer)

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Myles Tension

Recommendations for home measurement:

- Approved machines have Hypertension Canada logo
- Patients should do two readings every morning or evening x 7 days. Discard the first day readings and average the last six readings.

Myles Recommendations

Moving Forward



1.2 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)


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Which of the following interventions reduce blood pressure?

Select all that apply.

- Adopting the DASH diet or low salt diet
- Regular exercise
- Weight loss
- Reducing alcohol to no more than two drinks per day
- All of the above



Submit



1.3 Lifestyle Interventions 1

SCFPC Learn

Lifestyle Interventions



Answer: All of the above

- DASH Diet
- Exercise
- Weight Loss
- Alcohol Reduction



Click on the interventions on the left to see systolic blood pressure reductions

Moving Forward

DASH (Slide Layer)

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Lifestyle Interventions



Answer: All of the above

- DASH Diet
- Exercise
- Weight Loss
- Alcohol Reduction

Intervention: Dash diet, High fruit/vegetables, low sodium, most studies over 1-6 months.

Reduction: 3.9 mmHg (if untreated, 5.9)



*similar results for general salt (sodium) reduction

Moving Forward

Exercise (Slide Layer)

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Lifestyle Interventions



Answer: All of the above

DASH Diet

Exercise

Weight Loss

Alcohol Reduction



Intervention: Aerobic exercise over 2-6 months
Reduction: ~5mmHg

Moving Forward

Weight Loss (Slide Layer)

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Lifestyle Interventions



Answer: All of the above

DASH Diet

Exercise

Weight Loss

Alcohol Reduction



Intervention: Weight loss over 3-24months.
Reduction: 5.5mmHg

Moving Forward

Alcohol Reduction (Slide Layer)

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Lifestyle Interventions



Answer: All of the above

- DASH Diet
- Exercise
- Weight Loss
- Alcohol Reduction

Intervention: Alcohol reduction over 1-3 months

Reduction Range:



- 5.5mmHg (baseline ≥ 6 drinks/day)
- 0mmHg (if baseline ≤ 2 drinks/day)

Moving Forward

1.4 Lifestyle Interventions 2

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise
- Weight Loss
- Alcohol Reduction



Click on the interventions on the left to see systolic blood pressure reductions

Moving Forward

Low Sodium (Slide Layer)

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise
- Weight Loss
- Alcohol Reduction

Low Sodium Diet: Unclear effects on mortality and CVD

- When eight randomized controlled trials (RCTs) were pooled (7198 patients, over 0.5-16 years), no reduction in mortality was seen. A non-significant trend for reduced CVD was observed.

Moving Forward

Low Sodium 2 (Slide Layer)

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise
- Weight Loss
- Alcohol Reduction

Low Sodium Diet: Unclear effects on mortality and CVD



- A 2021 RCT of 20,995 patients (with past stroke or age ≥ 60 with hypertension) were given a salt substitute (75% sodium/25% potassium) or regular salt. The group receiving the substitute had reduced death and CVD (e.g., 39 versus 45 deaths per 1000 patient years). Unclear if benefits due to reduce sodium, increased potassium, or both.

Moving Forward

Exercise (Slide Layer)

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise**
- Weight Loss
- Alcohol Reduction

Exercise
Most studies in done in patients with established CVD (and exercise was not used as a direct treatment for hypertension). A review of 47 RCTs (10,794 patients) showed exercise reduced mortality and CV mortality (number needed to treat (NNT) 32 over 4 years).

Moving Forward

Weight Loss (Slide Layer)

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise
- Weight Loss**
- Alcohol Reduction

Weight Loss
Weight loss is not independently associated with reduced mortality.

Moving Forward

Alcohol Reduction (Slide Layer)

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Lifestyle Interventions



What is the evidence for reducing outcomes such as cardiovascular disease in hypertensive patients?

- Low Sodium #1
- Low Sodium #2
- Exercise
- Weight Loss
- Alcohol Reduction**

Alcohol reduction
RCTs of reduction are limited, and done on patients with moderate/increased intake. They have not shown overall mortality reduction but have not been specific to CVD.

There is RCT evidence of alcohol reduction preventing recurrence of atrial fibrillation (NNT 5 over six months).

Moving Forward

1.5 Myles Tension

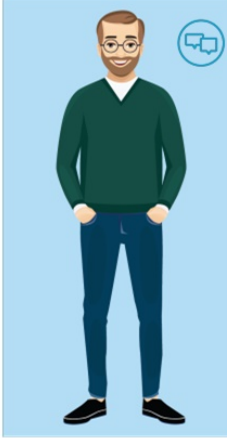
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Myles Tension

You ask Myles about his alcohol intake and whether he exercises.

Myles Assessment

Moving Forward



Assessment (Slide Layer)

The screenshot shows a slide titled "Myles Tension" with a vertical sidebar on the left containing icons for information, a flag, a list, and a user profile. The main content area features a light blue box with two paragraphs of text. The first paragraph states that Myles drinks minimally, has a BMI of about 25, and exercises regularly, with no specific recommendations needed. The second paragraph encourages him to continue with physical activity for health benefits. Below the text are two dark blue buttons labeled "Myles" and "Assessment", and an orange "Moving Forward" button. On the right, there is a full-body illustration of a man named Myles, wearing a green sweater and blue pants, with a speech bubble icon above his head.

Myles Tension

Myles drinks minimally. His BMI is about 25 and he exercises regularly. No specific recommendations are needed here.

We would encourage him to continue with physical activity for the many varying health benefits.

Myles **Assessment**

Moving Forward

Myles (Slide Layer)

The screenshot shows a slide titled "Myles Tension" with the same sidebar as the previous slide. The main content area features a light orange speech bubble containing a quote from Myles. Below the quote are two dark blue buttons labeled "Myles" and "Assessment", and an orange "Moving Forward" button. On the right, there is a full-body illustration of Myles, identical to the one in the previous slide.

Myles Tension

Myles
"I only drink a few beers on the weekend and I exercise about three times a week."

Myles **Assessment**

Moving Forward

1.6 Myles Tension

CFPC Learn

Myles Tension

You ask Myles about his alcohol intake and whether he exercises.

Salt Substitutes Myles

Moving Forward

This screenshot shows a learning module interface. On the left is a vertical navigation bar with icons for home, a list, a document, and a person. The main content area has a title 'Myles Tension' and a text box containing the question: 'You ask Myles about his alcohol intake and whether he exercises.' Below the text box are two buttons: 'Salt Substitutes' and 'Myles'. At the bottom right is an orange button labeled 'Moving Forward'. On the right side of the screen is a full-body illustration of a man with glasses and a beard, wearing a green sweater and blue pants, standing against a light blue background. A speech bubble icon is in the top right corner of the illustration area.

Salt (Slide Layer)

CFPC Learn

Myles Tension

Salt reduction has been shown to reduce BP and recent salt substitute evidence found reduction in major cardiovascular events.

Salt substitute will be encouraged in Myles' treatment plan.

Salt Substitutes Myles

Moving Forward

This screenshot shows the same learning module interface as above, but with a slide layer open. The slide layer is a light blue box with a close button (an 'x' in a dark blue square) in the top right corner. It contains two paragraphs of text: 'Salt reduction has been shown to reduce BP and recent salt substitute evidence found reduction in major cardiovascular events.' and 'Salt substitute will be encouraged in Myles' treatment plan.' The 'Salt Substitutes' button is now highlighted in dark blue, and the 'Myles' button is dimmed. The 'Moving Forward' button remains orange. The illustration of Myles and the navigation bar are the same as in the previous screenshot.

Myles (Slide Layer)

The screenshot shows a slide layer titled "Myles Tension" from the CFPCLearn platform. On the left, there is a vertical sidebar with icons for information, a list, a document, and a user profile. The main content area features a light blue header with the title "Myles Tension" and a small "x" icon. Below the header is a large, light orange speech bubble containing the text: "Myles 'Do I need some kind of physical or test for high blood pressure?'". Underneath the speech bubble are two dark blue buttons labeled "Salt Substitutes" and "Myles". At the bottom right of the slide layer is an orange button labeled "Moving Forward". On the right side of the slide layer is a full-body illustration of a man with glasses and a beard, wearing a green sweater and blue pants, standing with his hands in his pockets. A speech bubble icon is positioned above his head.

1.7 Multiple choice question


(Multiple Response, 10 points, 1 attempt permitted)

The screenshot shows a multiple choice question interface from the CFPCLearn platform. The question is: "Which of the following tests are suggested by Hypertension Canada on first diagnosis?". The question is displayed in a blue header bar. To the right of the question is a circular profile picture of the same man from the slide layer above. Below the question is a list of test options, each with a checkbox: "Serum lipids" (checked), "HbA1c or fasting glucose" (checked), "Urinalysis" (checked), "Exercise stress test" (unchecked), "ECG" (checked), "Echocardiogram" (unchecked), "Creatinine, Na+, K+" (checked), and "Mg++, Ca++" (unchecked). To the right of the list is the text "Select all that apply". At the bottom right is an orange "Submit" button. The left sidebar from the slide layer is also visible.

1.8 Answer

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Review



Answer: The correct answers are: serum lipids; HbA1c or fasting glucose; creatinine, Na+, K+; urinalysis; and ECG.

Testing for first time diagnosis of hypertension

- Non-fasting lipids/cholesterol: helps to risk stratify; recommended starting at age 40 for men.
- If Myles is diabetic, management of hypertension is most important intervention to prevent serious cardiovascular events.
- Creatinine and often electrolytes needed to monitor treatment.
- Ca++ and Mg++ not necessary.
- Urinalysis and ECG recommended based on expert opinion.
- Exercise stress test or echo not indicated in asymptomatic patients.

Moving Forward

1.9 Myles Tension

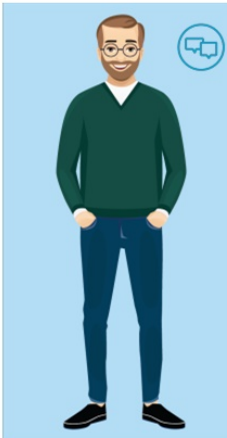
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Myles Tension

Guidelines, like Hypertension Canada, do not have specific recommendations for physical exam with a hypertension diagnosis.

Myles You

Moving Forward



Myles (Slide Layer)

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Myles Tension

Myles
"Well, I guess that pretty much covers it for now."

Myles You

Moving Forward

The screenshot shows a slide layer interface. On the left is a vertical toolbar with icons for help, back, forward, and user profile. The main content area features a title 'Myles Tension', a character name 'Myles', and a speech bubble containing his dialogue. Below the speech bubble are two buttons labeled 'Myles' and 'You'. At the bottom right is an orange 'Moving Forward' button. On the right side of the slide, there is a full-body illustration of a man with glasses and a beard, wearing a green sweater and blue pants, with a speech bubble icon above his head.

You (Slide Layer)

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Myles Tension

You
"Myles, I think it will take more than salt reduction to lower your blood pressure enough. At least one medicine will be needed too."

Myles You

Moving Forward


This screenshot is similar to the first one but shows the 'You' character's dialogue. The speech bubble text is: "Myles, I think it will take more than salt reduction to lower your blood pressure enough. At least one medicine will be needed too." The 'Myles' and 'You' buttons are still present, and the 'Moving Forward' button is at the bottom right. The character illustration on the right remains the same.

1.10 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

CFPC Learn

What medication classes are consistently recommended as first line?



Select all that apply.


- ACE inhibitors (ACEI) or Angiotension receptor blockers (ARBs)
- Alpha blockers
- Beta blockers
- Mineralocorticoid agents
- Thiazide diuretics
- Calcium channel blockers

Submit

1.11 Answer

CFPC Learn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.


- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

Let's Look at More

thiazide (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

Thiazide or thiazide-like diuretics


- These include chlorthalidone, indapamide or hydrochlorothiazide. Chlorthalidone is preferred due to long half-life and proven reduction of CVD.
- Indapamide is next, for similar reasons.

Let's Look at More

ccb (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

Calcium channel blockers (CCBs)


CCBs, specifically long-acting dihydropyridine calcium channel blockers, include amlodipine and felodipine.

Let's Look at More

ace (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

ACE inhibitors or ARBS
There are a number of types. ACE inhibitors and ARBS should not be used together.


Note: ACE inhibitors should be avoided as first line in Black patients.

Let's Look at More

bb (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers


Beta Blockers
Beta blockers are not recommended in patients over 60 years old (Hypertension Canada) or as first line for any patients in UK or American guidelines due to lack of CVD reduction evidence.

Let's Look at More

minera (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

Mineralocorticoid agents


While mineralocorticoid agents like spironolactone reduce blood pressure, no hypertension trials have examined CVD outcomes.

Let's Look at More

alpha (Slide Layer)

SCFPCLearn

Myles Tension



Answer: The correct answer are in blue. All first line therapies have consistent evidence for reduction of cardiovascular disease in hypertensive patients.

- Thiazide diuretics
- CCBs
- ACEI or ARBs
- Beta-blockers
- Mineralocorticoids
- Alpha-blockers

Alpha blockers



Alpha blockers, like doxazosin, are found to be inferior to chlorthalidone.

Let's Look at More

1.12 Create a Plan

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Let's Make a Plan



Using what you have learned, write a plan for Myles. 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

1.13 Plan Answers

SCFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls
- Next Appointment

What's in a name?



Select details on the left to see suggested recommendations

Next Patient Back to Day Sheet

Salt Substitute (Slide Layer)

SCFPCLearn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls
- Next Appointment

What's in a name?



Salt Substitute
Reduce sodium intake by switching to a salt substitute with potassium. Example: Half-Salt™.

Next Patient Back to Day Sheet

Blood Work (Slide Layer)

SCFPCLearn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls
- Next Appointment

What's in a name?



Blood Work
Order baseline bloodwork:
• Non-fasting lipids, HbA1c, creatinine, potassium, sodium, urinalysis and ECG.

Next Patient Back to Day Sheet

Prescription (Slide Layer)

SCFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription**
- BP Monitoring
- Practice Pearls
- Next Appointment

What's in a name?

Prescription
Start low-dose chlorthalidone 12.5mg daily for 40 days (10 tabs).*



*see *Practice Pearls*

Next Patient Back to Day Sheet

BP Monitoring (Slide Layer)

SCFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring**
- Practice Pearls
- Next Appointment

What's in a name?

BP Monitoring
At three weeks,



- Do home BP every morning or evening for seven days. Discard the first day and average the last six readings.
- Do labs for creatinine, potassium and sodium. Provide a second lab requisition.

Next Patient Back to Day Sheet

Practice Pearls (Slide Layer)

SCFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls**
- Next Appointment

What's in a name?

Practice Pearls



- Chlorthalidone 12.5mg is one-quarter of the lowest dose tablet (50mg) available in Canada. The half-life is about 50 hours so slight differences tablet splitting will not matter.
- Moderate hyponatremia ($Na < 130 \text{mmol/L}$) and hypokalemia ($K < 3.2 \text{mmol/L}$) each occur in about 4% of thiazide users.

Next Patient Back to Day Sheet

Next Appointment (Slide Layer)

SCFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls
- Next Appointment**

What's in a name?



Next Appointment
Return in four weeks for review.

Next Patient Back to Day Sheet

Name (Slide Layer)

CFPC Learn

Myles Tension



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

- Salt Substitute
- Blood Work
- Prescription
- BP Monitoring
- Practice Pearls
- Next Appointment

What's in a name?

Meaning Behind the Name:
Myles Tension
Myles Tension is mild tension.

Next Patient Back to Day Sheet