

Visual Element Questions (Q)

Q1: Explain the table 3 about anamnestic information for clinical evaluation in children/adolescents with hypertension

Time Taken to Generate Responses for Q1:

Model Name	Time in Seconds
Llama-2	319.06
MedAlpaca	257.14
Meditron	177.61
Mistral	124.59

Llama-2 Score and Responses:

METEOR Score: 0.12781186094069533

CHRF Score: 0.2876990102030132

Reference Text:

Table 3 Explanation

- (1) Family history of HTN (namely pregnancy hypertension), CVD, familial hypercholesterolaemia.
- (2) Birth weight and gestational age.
- (3) Environmental factors: smoking habit, salt intake, alcohol consumption, drug/substance intake.
- (4) Physical exercise/leisure time.
- (5) Possible symptoms (headache, epistaxis, vertigo, visual impairment, strokes, low school performance, attention defects, dyspnoea, chest pain, palpitations and syncope)

Model Generated Text:

The following is a possible explanation of Table 3, which provides guidance on clinical evaluation in children and adolescents with high blood pressure (hypertension). It includes recommendations to consider when clinically evaluating patients who have been diagnosed with hypertension or suspected of having hypertension.

Table 3:

Tips: Here are some tips for writing your own explanation of Table 3:

1. Include a brief introduction to provide context for the table and its research significance. This could include a summary of the research question or hypothesis being evaluated in the table, as well as an overview of the methodology and results.
2. Provide a clear and concise explanation of each column of data in the table. For example, you may want to describe what the values represent and how they were calculated.
3. Explain any abbreviations or acronyms used in the table, including their meaning and significance.
4. Discuss the statistical significance of the findings and any relevant implications.

MedAlpaca Score and Responses:

METEOR Score: 0.04232164449818621

CHRF Score: 0.15415751422582313

Reference Text:

Table 3 Explanation

- (1) Family history of HTN (namely pregnancy hypertension), CVD, familial hypercholesterolaemia.
- (2) Birth weight and gestational age.
- (3) Environmental factors: smoking habit, salt intake, alcohol consumption, drug/substance intake.
- (4) Physical exercise/leisure time.
- (5) Possible symptoms (headache, epistaxis, vertigo, visual impairment, strokes, low school performance, attention defects, dyspnoea, chest pain, palpitations and syncope)

Model Generated Text:

Yes, this is a table about different guidelines for clinical evaluation in children and adolescents with hypertension. The 4th edition was released in 2013 by the European Society of Paediatric Cardiology.

Meditron Score and Responses:

METEOR Score: 0.1524390243902439

CHRF Score: 0.2711584876154464

Reference Text:

Table 3 Explanation

- (1) Family history of HTN (namely pregnancy hypertension), CVD, familial hypercholesterolaemia.
- (2) Birth weight and gestational age.
- (3) Environmental factors: smoking habit, salt intake, alcohol consumption, drug/substance intake.
- (4) Physical exercise/leisure time.
- (5) Possible symptoms (headache, epistaxis, vertigo, visual impairment, strokes, low school performance, attention defects, dyspnoea, chest pain, palpitations and syncope)

Model Generated Text:

The question is really complex and it's difficult to answer in a short time (the text of the manuscript must be kept). I will try to summarize my thoughts. The table 3 provides a summary of the different guidelines, highlighting the most important aspects and differences between them. It also provides suggestions on possible future directions for improving clinical evaluation in children/adolescents with hypertension. The American Academy of Pediatrics (AAP) released its first guideline for high

blood pressure screening and management in children and adolescents in 2017, which defines hypertension as a blood pressure measurement at or above the 95th percentile for age, sex, and height on three separate occasions. However, the AAP has recently published an update to this guideline in 2023 (6) that includes additional considerations for overweight/obese youths. These considerations suggest that while it may be reasonable to include individuals with a body mass index percentile between the 85th and <95th or with a waist circumference >75th percentile, a more stringent threshold (the ≥ 95 th percentile) should

Mistral Score and Responses:

METEOR Score: 0.12969636776390467

CHRF Score: 0.31171262216974926

Reference Text:

Table 3 Explanation

- (1) Family history of HTN (namely pregnancy hypertension), CVD, familial hypercholesterolaemia.
- (2) Birth weight and gestational age.
- (3) Environmental factors: smoking habit, salt intake, alcohol consumption, drug/substance intake.
- (4) Physical exercise/leisure time.
- (5) Possible symptoms (headache, epistaxis, vertigo, visual impairment, strokes, low school performance, attention defects, dyspnoea, chest pain, palpitations and syncope)

Model Generated Text:

Table 3 provides an overview of anamnestic information that can be useful during the clinical evaluation of children and adolescents with hypertension. This information includes various categories such as family history, personal medical history, lifestyle factors, and other environmental factors. Each category may include specific questions or prompts to help elicit relevant information from the patient or their caregiver. Overall, the anamnestic information provided in Table 3 can help inform a more comprehensive clinical evaluation of children and adolescents with hypertension.

Q2: How do primary and secondary hypertension in children differ regarding clinical signs?

Time Taken to Generate Responses for Q2:

Model Name	Time in Seconds
Llama-2	362.19
MedAlpaca	369.40
Meditron	225.87
Mistral	197.42

Llama-2 Score and Responses:

METEOR Score: 0.15686274509803919

CHRF Score: 0.3434721728359762

Reference Text:

In primary hypertension there is normally an absence of murmurs, normal femoral pulses and excess weight frequent. In secondary hypertension you will more likely find a cardiac/ and or adominal murmur, upper limb hypertension and weak/ Absent femoral pulses and excess weight rarely present.

Model Generated Text:

Primary hypertension in children is characterized by a sustained elevation of blood pressure, while secondary hypertension is a form of acute response to an elevated blood pressure. It manifests as an increase in total peripheral resistance and a decrease in cardiac output. In contrast, secondary hyper - tension in adults does not cause a similar increase in blood pressure, but rather occurs in the setting of an acute rise in venous tone.

MedAlpaca Score and Responses:

METEOR Score: 0.17552617770522386

CHRF Score: 0.3385317350274116

Reference Text:

In primary hypertension there is normally an absence of murmurs, normal femoral pulses and excess weight frequent. In secondary hypertension you will more likely find a cardiac/ and or adominal murmur, upper limb hypertension and weak/ Absent femoral pulses and excess weight rarely present.

Model Generated Text:

Secondary hypertension refers to the elevated blood pressure readings observed in adults, which may indicate underlying illness (e.g., renal disease, heart failure, pregnancy) apart from the normal blood pressure ranges for children. Primary hypertension is diagnosed when systolic blood pressure exceeds 90 mm Hg and/or diastolic blood pressure exceeds 60 mm Hg, which are abnormal even without proteinuria or other signs of illness). It requires a detailed evaluation, including laboratory tests and imaging), while microalbuminuria refers to the presence of protein in urine, which may indicate kidney damage).

Meditron Score and Responses:

METEOR Score: 0.38770919481072635

CHRF Score: 0.48019784524763964

Reference Text:

In primary hypertension there is normally an absence of murmurs, normal femoral pulses and excess weight frequent. In secondary hypertension you will more likely find a cardiac/ and or adominal murmur, upper limb hypertension and weak/ Absent femoral pulses and excess weight rarely present.

Model Generated Text:

Primary HTN is often devoid of a positive family history, and symptoms may be present, correlating with the severity of the condition. Clinical signs can include cardiac and/or abdominal murmurs and weak or absent femoral pulses. Excess weight is rarely present in secondary hypertension cases. Blood chemistry may reveal abnormal potassium levels, high creatinine, and a low glomerular filtration rate. Possible blood cell casts in urine sediment and elevated thyroid - stimulating hormone in the presence of obesity may also be observed. Hyperuricemia is more frequent in secondary hypertension cases but infrequent in primary hypertension.

Mistral Score and Responses:

METEOR Score: 0.19641155196950114

CHRF Score: 0.28789987747205453

Reference Text:

In primary hypertension there is normally an absence of murmurs, normal femoral pulses and excess weight frequent. In secondary hypertension you will more likely find a cardiac/ and or adominal murmur, upper limb hypertension and weak/ Absent femoral pulses and excess weight rarely present.

Model Generated Text:

Both primary and secondary hypertension can be present in children, but they differ in terms of clinical signs. In the case of primary hypertension, there are typically no specific clinical signs, and the condition is often identified through routine blood pressure screening.

On the other hand, secondary hypertension is more likely to be associated with specific clinical signs. These signs can include headaches, dizziness or lightheadedness, shortness of breath, chest pain, palpitations, fatigue, confusion, and blurred vision. It's important to note that these symptoms can also be present in other conditions, so their presence alone does not necessarily indicate the presence of secondary hypertension.

Overall, while both primary and secondary hypertension can be present in children, they differ significantly in terms of clinical signs. Primary hypertension is typically asymptomatic and identified through routine blood pressure screening. In contrast, secondary hypertension is more likely to be associated with specific clinical signs. These signs can include headaches, dizziness or lightheadedness, shortness of breath, chest pain, palpitations, fatigue, confusion, and blurred vision.

Q3: Which kind of physical activity and diet is recommended as part of lifestyles modifications in pediatric hypertension?

Time Taken to Generate Responses for Q3:

Model Name	Time in Seconds
Llama-2	412.64
MedAlpaca	414.69
Meditron	290.68
Mistral	194.03

Llama-2 Score and Responses:**METEOR Score: 0.19301090377697847****CHRF Score: 0.2989687425567287****Reference Text:**

Activity:

At least 60 min of activity per day, at least moderate (jogging, cycling, or swimming).

More activity = more good health.

Aerobic mostly, but with resistance components (3 times/week).

No more than 2-h sedentary behaviour per day.

If stage 2 hypertension, avoid competitive sports.

Diet:

Avoid free sugar ($\leq 5\%$ of total calories), soft-sweetened drinks, saturated fat. Prefer fruits, vegetables, and grain products (ideally, ≥ 4 –5 servings/day). Limit sodium intake (≤ 2300 mg/daily).

Model Generated Text:

The American Heart Association recommends a healthy diet for children with high blood pressure (hypertension). This includes fruits, vegetables, whole grains and low-fat dairy foods. Reducing salt in the diet is also helpful.

A child's activity level should be age appropriate, but it's important to encourage regular physical exercise.

Exercise can help lower blood pressure, and children who are overweight or obese may be able to reduce their blood pressure even more with weight loss.

Several small studies have shown that yoga helps reduce high blood pressure in children by reducing stress and anxiety.

Most healthcare providers will recommend lifestyle changes as a first step before considering medication for hypertension in children.

These changes may include:

Limiting salt intake

Getting more exercise (aiming for 60 minutes of physical activity per day)

Eating a heart-healthy diet that includes fruits, vegetables and whole grains

Reducing stress at home or school

If your child's blood pressure remains high after lifestyle changes are implemented, medication

MedAlpaca Score and Responses:**METEOR Score: 0.010672358591248664****CHRF Score: 0.0385275993656021****Reference Text:**

Activity:

At least 60 min of activity per day, at least moderate (jogging, cycling, or swimming).

More activity = more good health.

Aerobic mostly, but with resistance components (3 times/week).

No more than 2-h sedentary behaviour per day.

If stage 2 hypertension, avoid competitive sports.

Diet:

Avoid free sugar ($\leq 5\%$ of total calories), soft-sweetened drinks, saturated fat. Prefer fruits, vegetables, and grain products (ideally, ≥ 4 –5 servings/day). Limit sodium intake (≤ 2300 mg/daily).

Model Generated Text:

The 2017 AHA recommends a reduced-salt diet for children.

Meditron Score and Responses:

METEOR Score: 0.23646511627906974

CHRF Score: 0.35180933429988953

Reference Text:

Activity:

At least 60 min of activity per day, at least moderate (jogging, cycling, or swimming).

More activity = more good health.

Aerobic mostly, but with resistance components (3 times/week).

No more than 2-h sedentary behaviour per day.

If stage 2 hypertension, avoid competitive sports.

Diet:

Avoid free sugar ($\leq 5\%$ of total calories), soft-sweetened drinks, saturated fat. Prefer fruits, vegetables, and grain products (ideally, ≥ 4 –5 servings/day). Limit sodium intake (≤ 2300 mg/daily).

Model Generated Text:

We strongly agree with the current guidelines which recommend that all children should perform at least 60 min per day of moderate to vigorous intensity aerobic physical activity. However, it is currently unknown whether additional activity above this level may confer additional benefits in children and adolescents who are already physically active. We agree with the AHA statement that more studies are needed to determine optimal amounts and types of physical activity for CV health promotion.⁹¹

In terms of diet, we agree with the current guidelines which suggest a balanced diet, rich in fruits, vegetables, whole grains, and low in sodium and saturated fat. However, evidence on this topic is also limited in children and adolescents with hypertension.

We agree that the effect of weight reduction on BP is less clear than that observed for adults.^{91,95,96}

Mistral Score and Responses:

METEOR Score: 0.2352734272938255

CHRF Score: 0.3610018439177194

Reference Text:

Activity:

At least 60 min of activity per day, at least moderate (jogging, cycling, or swimming).

More activity = more good health.

Aerobic mostly, but with resistance components (3 times/week).

No more than 2-h sedentary behaviour per day.

If stage 2 hypertension, avoid competitive sports.

Diet:

Avoid free sugar ($\leq 5\%$ of total calories), soft-sweetened drinks, saturated fat. Prefer fruits, vegetables, and grain products (ideally, $\geq 4-5$ servings/day). Limit sodium intake (≤ 2300 mg/daily).

Model Generated Text:

The American Academy of Pediatrics recommends a comprehensive approach to managing pediatric hypertension, which includes lifestyle modifications such as physical activity and diet. In terms of physical activity, the AAP recommends at least 60 minutes of moderate-to-vigorous intensity physical activity per day for children and adolescents. Examples of moderate-intensity activities include brisk walking, cycling at a leisurely pace, and playing catch or doubles tennis without scorekeeping or competition. Examples of vigorous-intensity activities include running, swimming laps, jumping rope, and playing soccer, basketball, or other competitive sports with regular scoring, competition, and rules.

In terms of dietary modifications, the AAP recommends a balanced, healthy diet that is rich in fruits, vegetables, whole grains, lean protein sources, and heart-healthy fats such as monounsaturated and polyunsaturated fatty acids. The AAP also recommends limiting intake of saturated and trans fats, added sugars, sodium, and alcohol.

It is important to note that individual nutritional needs may vary depending on age, sex, size, physical activity level, and medical conditions.

Q4: What is the threshold for the modifiable cardio-metabolic risk factor dyslipidaemia regarding HDL cholesterol?

Time Taken to Generate Responses for Q4:

Model Name	Time in Seconds
Llama-2	243.15
MedAlpaca	290.68
Meditron	170.91
Mistral	142.00

Llama-2 Score and Responses:

METEOR Score: 0.8236208236208235

CHRF Score: 0.75395896026982

Reference Text:

The threshold for the modifiable cardio-metabolic risk factor is below < 40 mg/dl.

Model Generated Text:

The threshold for the modifiable cardio-metabolic risk factor dyslipidaemia regarding HDL cholesterol is < 30 mg/dL.

MedAlpaca Score and Responses:

METEOR Score: 0.1552795031055901

CHRF Score: 0.1769453186894246

Reference Text:

The threshold for the modifiable cardio-metabolic risk factor is below < 40 mg/dl.

Model Generated Text:

The National Cholesterol Education Program (NCEP) recommends adults aged 40 years or older to begin lipid assessment every 5 years, with the last evaluation at age 55 for men and women.

Meditron Score and Responses:

METEOR Score: 0.03184713375796178

CHRF Score: 0.21865328284174537

Reference Text:

The threshold for the modifiable cardio-metabolic risk factor is below < 40 mg/dl.

Model Generated Text:

The International Diabetes Federation definition of paediatric metabolic syndrome includes high plasma glucose concentrations as a defining criterion (fasting >5.6 mmol/L or 2-hour post-load >7.8 mmol/L).^{4,5}

Mistral Score and Responses:

METEOR Score: 0.28450868983957217

CHRF Score: 0.29920422267283703

Reference Text:

The threshold for the modifiable cardio-metabolic risk factor is below < 40 mg/dl.

Model Generated Text:

The American Academy of Pediatrics (AAP) guidelines do not provide a specific threshold for low HDL cholesterol levels in children and adolescents with dyslipidemia, but instead recommend that these individuals be evaluated for modifiable risk factors and that treatment be individualized based on the severity of the lipid abnormalities and the presence of other cardiovascular risk factors.