

FMCSA Clinical Areas

Hypertension

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HYPERTENSION 49CFR391.41(b)(6)

REGULATION

- A person is physically qualified to drive a commercial motor vehicle if that person:
 - Has **no current clinical diagnosis** of high blood pressure likely to interfere with his/her ability to operate a commercial motor vehicle safely

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HYPERTENSION

- 29% of all U.S. adults over 18 have BP greater than 140/90 or are taking medication for hypertension
- 78% aware of condition
- 68% are treated with anti-hypertensive meds
- 64% get BP lower than 140/90 with tx
 - *National Health and Nutrition Examination Survey*

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RELEVANCE TO DRIVING

- HTN alone is unlikely to cause sudden incapacitation BUT
 - Risk factor for
 - Cardiovascular Disease
 - Chronic Renal Insufficiency
 - In individuals above 40 years old, every 20 mm Hg systolic or 10mm Hg diastolic leads to:
 - Doubling of mortality from
 - Ischemic Heart Disease
 - Stroke

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RELEVANCE TO DRIVING

- Commercial Drivers at Greater Risk for HTN
 - Risk increases with years driving
 - <10 years \implies 29% of drivers
 - 10 years \implies 32% of drivers
 - 20 years \implies 39% of drivers
 - Aging, Sedentary, irregular sleep schedules, stress, poor diet, supplements for wakefulness etc.
 - Treatment reduces risk

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Original FMCSA Recommendation

5. BLOOD PRESSURE/PULSE RATE Numerical readings must be recorded. Medical Examiner should take at least two readings to confirm BP.

Blood Pressure	Systolic	Diastolic	Reading	Category	Expiration Date	Recertification
	133	84	140-159/90-99	Stage 1	1 year	1 year if \leq 140/90. One-time certificate for 3 months if 141-159/91-99
Driver qualified if \leq 140/90:						
Pulse Rate: <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Irregular						
			160-179/100-109	Stage 2	One-time certificate for 3 months.	1 year from date of exam if \leq 140/90
Record Pulse Rate: 76						
			$>$ 180/110	Stage 3	6 months from date of exam if \leq 140/90	6 months if \leq 140/90

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HYPERTENSION 49CFR391.41(b)(6)

REGULATION

1. A person is physically qualified to drive a commercial motor vehicle if that person has a clinical diagnosis of high blood pressure likely to interfere with ability to operate a commercial motor vehicle safely.
2. Hypertension alone is unlikely to cause sudden collapse; however, the likelihood increases when target organ damage, particularly cerebral vascular disease, is present. This regulatory provision is based on the Federal Motor Carrier Safety Administration's Cardiovascular Advisory Guidelines for the Examination of commercial motor vehicle drivers, which used the Sixth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (1997).
3. Stage 1 hypertension corresponds to a systolic blood pressure of 140-159 mmHg and/or a diastolic blood pressure of 90-99 mmHg. The driver with a blood pressure in this range is at low risk for hypertension-related acute incapacitation and may be medically certified to drive for a one-year period. Certification examinations should be done annually thereafter and should be at or less than 140/90. If less than 160/100, certification may be extended one time for 3 months.
4. A blood pressure of 160-179 systolic and/or 100-109 diastolic is considered Stage 2 hypertension, and the driver is not necessarily unqualified during evaluation and institution of treatment. The driver is given a one-time certification of three months to reduce his or her blood pressure to less than or equal to 140/90. A blood pressure in this range is an absolute indication for anti-hypertensive drug therapy. Provided treatment is well tolerated and the driver demonstrates a blood pressure value of 140/90 or less, he or she may be certified for one year from date of the initial exam. The driver is certified annually thereafter.
5. A blood pressure at or greater than 180 (systolic) and 110 (diastolic) is considered Stage 3, high risk for an acute blood pressure-related event. The driver may not be qualified, even temporarily, until reduced to 140/90 or less and treatment is well tolerated. The driver may be certified for 6 months and biannually (every 6 months) thereafter if at recheck blood pressure is 140/90 or less.
6. Annual recertification is recommended if the medical examiner does not know the severity of hypertension prior to treatment. An elevated blood pressure finding should be confirmed by at least two subsequent measurements on different days.
7. Treatment includes nonpharmacologic and pharmacologic modalities as well as counseling to reduce other risk factors. Most antihypertensive medications also have side effects, the importance of which must be judged on an individual basis. Individuals must be alerted to the hazards of these medications while driving. Side effects of somnolence or syncope are particularly undesirable in commercial motor vehicle drivers.

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HYPERTENSION 49CFR391.41(b)(6)

1. A person is physically qualified to drive a commercial motor vehicle if that person: Has no current clinical diagnosis of high blood pressure likely to interfere with ability to operate a commercial motor vehicle safely.
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NOTE: JNC-8 came out in 2014

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HYPERTENSION 49CFR391.41(b)(6)

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6. Annual recertification is recommended if the medical examiner does not know the severity of hypertension prior to treatment. An elevated blood pressure finding should be confirmed by at least two subsequent measurements on different days.

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HYPERTENSION 49CFR391.41(b)(6)

7. Treatment includes nonpharmacologic and pharmacologic modalities as well as counseling to reduce other risk factors. Most antihypertensive medications also have side effects, the importance of which must be judged on an individual basis. Individuals must be alerted to the hazards of these medications while driving. Side effects of somnolence or syncope are particularly undesirable in commercial motor vehicle drivers.
8. Secondary hypertension is based on the above stages. Evaluation is warranted if patient is persistently hypertensive on maximal or near-maximal doses of 2-3 pharmacologic agents. Some causes of secondary hypertension may be amenable to surgical intervention or specific pharmacologic disease.

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HYPERTENSION 49CFR 91.41(b)(6)

- An individual diagnosed with Stage 2 (BP is 160/100-179/109) should be treated and a one-time certificate for 3-month certification can be issued.
- Once the driver has reduced his or her BP to equal to or less than 140/90, he or she may be recertified annually thereafter.
- An individual diagnosed with Stage 3 hypertension (BP equal to or greater than 180/110) should not be certified until his or her BP is reduced to 140/90 or less, and may be recertified every 6 months."

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HYPERTENSION JNC-8

Table 2. Recommendations for the AHA/ACC Committee

General Area	JNC 8 Recommendation	Recommendations for AHA/ACC Committee
Diagnosis of hypertension	None	<ul style="list-style-type: none"> Add specific recommendations on use of ambulatory blood pressure monitoring and home blood pressure monitoring Devise a risk-based strategy for determination of treatment initiation thresholds and targets Specify timeframe of attempting lifestyle modification alone before initiation of therapy
Treatment initiation thresholds and targets	<p>Adults ≥ 60 y old, SBP/DBP treatment initiation threshold and target of 150/90 mm Hg</p> <p>Adults > 18 y old and < 60 y old or any adult with diabetes or CKD: SBP/DBP treatment initiation threshold and target of 140/90 mm Hg</p>	<ul style="list-style-type: none"> Lower the SBP treatment initiation threshold and target to 140 mm Hg for adults ≥ 60 y old Lower DBP treatment initiation threshold and target to 85 mm Hg for diabetic adults. Optional SBP/DBP treatment initiation threshold and target of $< 130/80$ mmHg for adults with CKD and > 300 mg/dL proteinuria Add specific guidance for adults with preexisting CVD
Selection of therapy	<p>Nonblack adults, including diabetics: first-line therapy includes thiazides, CCB, ACE/ARB</p> <p>Black adults, including diabetics: first-line therapy includes thiazides or CCB</p> <p>Adults with CKD: first-line therapy includes ACE/ARB</p>	<ul style="list-style-type: none"> For nonblack adults with preexisting CVD or diabetes, recommend ACEi or ARB as first-line therapy For black adults with diabetes, recommend ACEi or ARB as add-on therapy for patients requiring multistep therapy


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Another HYPERTENSION Recommendation (MRB 2013 & 2021 CDME Guide)

Recommendation Tables
Hypertension

Disorder/Procedure	Certification Approved if:	Not Approved if:	Recertification	Citation
Essential Hypertension Evaluate for other clinical CVD including TOD† Presence of TOD, CVD or diabetes may affect therapy selected.	Asymptomatic This disorder is rarely disqualifying alone	Symptomatic	Biennial	[56]


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Another HYPERTENSION Recommendation - Continued

Disorder/Procedure	Certification Approved if:	Not Approved if:	Recertification	Citation
Hypertension ($< 160/109$ mm Hg) Presents with BP measurement of 140-169/90-109 mmHg Note: Low risk for hypertension-related acute incapacitation	For 1 year, if the following are satisfied: It is the first examination at which the driver has BP $< 169/109$ and the driver: Has no history of hypertension Does not use antihypertensive medication to control BP	Hypertension and BP $\geq 169/109$ A history of stage 3 hypertension and BP $< 169/109$ BP $\geq 170/110$, regardless of any other considerations	Maximum – 1 year if BP $< 169/109$ Note: except drivers with history of stage 3 hypertension.	[56-64]


A blood pressure at or greater than 180 mmHg (systolic) and 110 mmHg (diastolic) is considered Stage 3, and carries a high risk for an acute blood pressure-related event.

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Another HYPERTENSION Recommendation - Continued


Disorder/Procedure	Certification Approved if:	Not Approved if:	Recertification	Citation
Hypertension $\geq 170/110$ Presents with BP measurement of 170/110 mmHg Note: This stage of hypertension carries a high risk for the development of acute hypertension-related symptoms that could impair judgment and driving ability.	Yes, at recheck**, if: BP $< 169/109$ mmHg Tolerates treatment with no side effects that interfere with driving	BP $\geq 170/110$, regardless of history or treatment, is immediately disqualifying **Note: Advise driver that failure to maintain BP at $< 169/109$ will render the driver medically unqualified in subsequent examinations	Maximum – 6 months if BP $< 169/109$	[56, 64, 65]

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Another HYPERTENSION Recommendation - Continued


Disorder/Procedure	Certification Approved if:	Not Approved if:	Recertification	Citation
Secondary Hypertension Information should be obtained that assesses the underlying cause, the effectiveness of treatment, and any side effects that may interfere with driving.	3 months post-intervention correction for related medical condition Blood pressure is $< 169/109$	The medical examiner believes the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.	Maximum – 1 year if BP $< 169/109$	[64, 65]

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REGULATION - Documentation

- You must:**
 - Review with driver and document any “yes” answers on bottom of health history form
 - Have high BP?
 - Take medication?
 - Effectiveness and Tolerance of medications

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HISTORY

- You **Should** evaluate for other CV diseases like:
 - Coronary Vascular Disease
 - Heart Failure
 - Left Ventricular Hypertrophy
 - Peripheral Arterial Disease
 - Retinopathy
 - Nephropathy
 - Other target organ damage

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PHYSICAL EXAMINATION

- You **Must** Measure Blood Pressure in your office:
 - NOTE: **Only** readings taken during the course of the examination (or follow up examinations) are to be used for certification decisions
 - BP > 139/89 **MUST** be confirmed with a second measurement taken later during the examination
 - Record additional blood pressure readings in your comments on the Medical Examiner Report form
 - What is the official method for measuring a blood pressure? (Timing?, Patient position?, etc.)

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PHYSICAL EXAMINATION

Special note from the FMCSA for providers:

- When blood pressure or pulse rate are factors in the decision not to certify a driver it would be prudent for the **medical examiner to measure BP and pulse personally** (It is in RED in the standard)

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PHYSICAL EXAMINATION

- Pulse Rate
 - Record pulse rate
 - Regular or Irregular
 - Additional pulse data in comments

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FMCSA DOCUMENTATION

TESTING

Pulse rate: 76 Pulse rhythm regular: Yes No

Blood Pressure	Systolic	Diastolic
Sitting	133	84
Second reading (optional)		

Other testing if indicated

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FMCSA DOCUMENTATION

Notes (bottom of history page)

- Poor
 - **HTN Stable**
- Better
 - **Htn tx with lisinopril**
- Best
 - **HTN x 10 years, Rx lisinopril 10mg Daily, tolerating well, no heart or kidney disease. Last Chol 185, LDL 98**

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KEY POINTS

- “Current Diagnosis of hypertension” exists when one or more medication is used to treat hypertension **OR** when BP exceeds 140/90
- Antihypertensives used for another medical condition
 - Certification is based on the other condition and tolerance of the medication
- Consider risk for other cardiovascular diseases

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Remember

- These are recommendations. The Medical Examiner may use his/her clinical expertise and results of the individual driver examination to determine whether to certify and the length of time between recertification examinations.

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SCENARIO 1

- Mr. Jones presents for certification, on **Lisinopril/HCTZ 20/12.5mg for HTN**, no TOD, no side effects from medications, physical exam normal, BP measurements of 130/85, and 125/82
 - You may certify for:
 - A) 1 year
 - B) 2 years
 - C) 3 months, and get a note from his treating physician
 - D) 6 months
 - E) Not Qualified

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ANSWER

- A) One Year
Diagnosis of HTN with adequate treatment

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SCENARIO 2

- Ms. Brown presents for initial certification, currently taking **HCTZ 12.5 mg**, history unremarkable, physical examination unremarkable, BP 150/95, 150/90
 - You may certify for:
 - A) 1 year
 - B) 2 years
 - C) 3 months
 - D) Determination Pending
 - E) Do Not Certify

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ANSWER

- A) One Year certification

OR

If you are concerned about anything...

“Determinations Pending” then driver has 45 days to work with PCP to better control BP

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SCENARIO 3

- Mr. Bird presents for recertification, admits to no medical history except hypertension, on **Coreg** and **Lisinopril**
- Physical Exam shows sternotomy scar, otherwise unremarkable, blood pressure readings 130/80, 125/85
 - You Should
 - A) Certify for two years
 - B) Certify for one year
 - C) Certify for three months
 - D) Ask a few more questions

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ANSWER – Scenario 3

- D) Ask a few more questions
 - BP is OK for 1 year certification
 - Sternotomy scar is concerning . . .

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SCENARIO 4

- Mr. Fuller presents to your office for a CDL recertification exam. BP Measured 156/96. He states that he has white coat hypertension and has a note from his PCP documenting three blood pressure readings from his doctor, all less than 140/90.
- You Should
 - A) Certify for One Year
 - B) Certify for Two Years
 - C) Repeat the blood pressure reading in your office then make certification decisions
 - D) Refer for ambulatory BP testing

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ANSWER – Scenario 4

- Answer: C
- You** should personally measure blood pressure before failing someone
- Blood Pressure (only readings taken during the examination, or follow up examinations, are to be used for certification decisions)
- NOTE: Depending on which recommendation you choose to follow

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SCENARIO 5

- Mr. Fuller presents to your office for a CDL recertification exam. Last year he had a BP of 184/112, which returned to normal with initiation of medication. His current BP is 152/94. Repeated testing finds 150/92.
- You Should
 - A) Certify for One Year
 - B) Certify for Two Years
 - C) Certify for 3 months
 - D) Not Eligible for Certification

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ANSWER 1 - Scenario 5

- Prior BP 184/112
- Now 152/94 & 150/92
- Old System:

Reading	Category	Expiration Date	Recertification
140-159/90-99	Stage 1	1 year	1 year if <140/90 One-time certificate for 3 months if 141-159/91-99
160-179/100-109	Stage 2	One-time certificate for 3 months.	1 year from date of exam if <140/90
>180/110	Stage 3	8 months from date of exam if <140/90	8 months if <140/90

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ANSWER 2 - Scenario 5

- Prior BP 184/112 ↗ Class 3 Hypertension (>180/110) Now 152/94 & 150/92
- Newer System:

Disorder/Procedure	Certification Approved if:	Not Approved if:	Recertification	Citation
Hypertension ($\geq 160/109$ mm Hg): Presents with BP measurement of 140-169/90-109 mmHg Note: Low risk for hypertension-related acute incapacitation	For 1 year, if the following are satisfied: It is the first examination at which the driver has BP $\leq 169/109$ and the driver: Has no history of hypertension Does not use antihypertensive medication to control BP	Hypertension and BP $\geq 169/109$ A history of stage 3 hypertension and BP $\geq 169/109$ BP $\geq 170/110$, regardless of any other considerations	Maximum = 1 year if BP $\leq 169/109$ Note: except drivers with history of stage 3 hypertension	[56-64]

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FINAL ANSWERS - Scenario 5

- Prior BP 184/112 Now 152/94 & 150/92
- Outcome Choices:
 - Old System – 3 month card
 - Newer System - ?????
 - Determination Pending to See PCP???

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**Questions ?
(Hypertension)**

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