

# Impact of the COVID-19 Pandemic on Cardiometabolic Health Parameters in Children

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# Cardiovascular Disease in Youth

- Atherosclerotic cardiovascular disease (ASCVD) pathogenesis begins in youth.
- **Early prevention and treatment of ASCVDRFs in children is essential to maintain cardiometabolic health and prevent cardiac events**
- The COVID-19 pandemic caused significant stressors for children
  - ↓physical activity, ↑ eating, abnormal sleep patterns.
- *Recent data:*
  - ↑ incidence and severity for new-onset type 2 diabetes.

# Aims

Compare the following items at time points *1 year before* and *during the first year* of the COVID-19 pandemic:

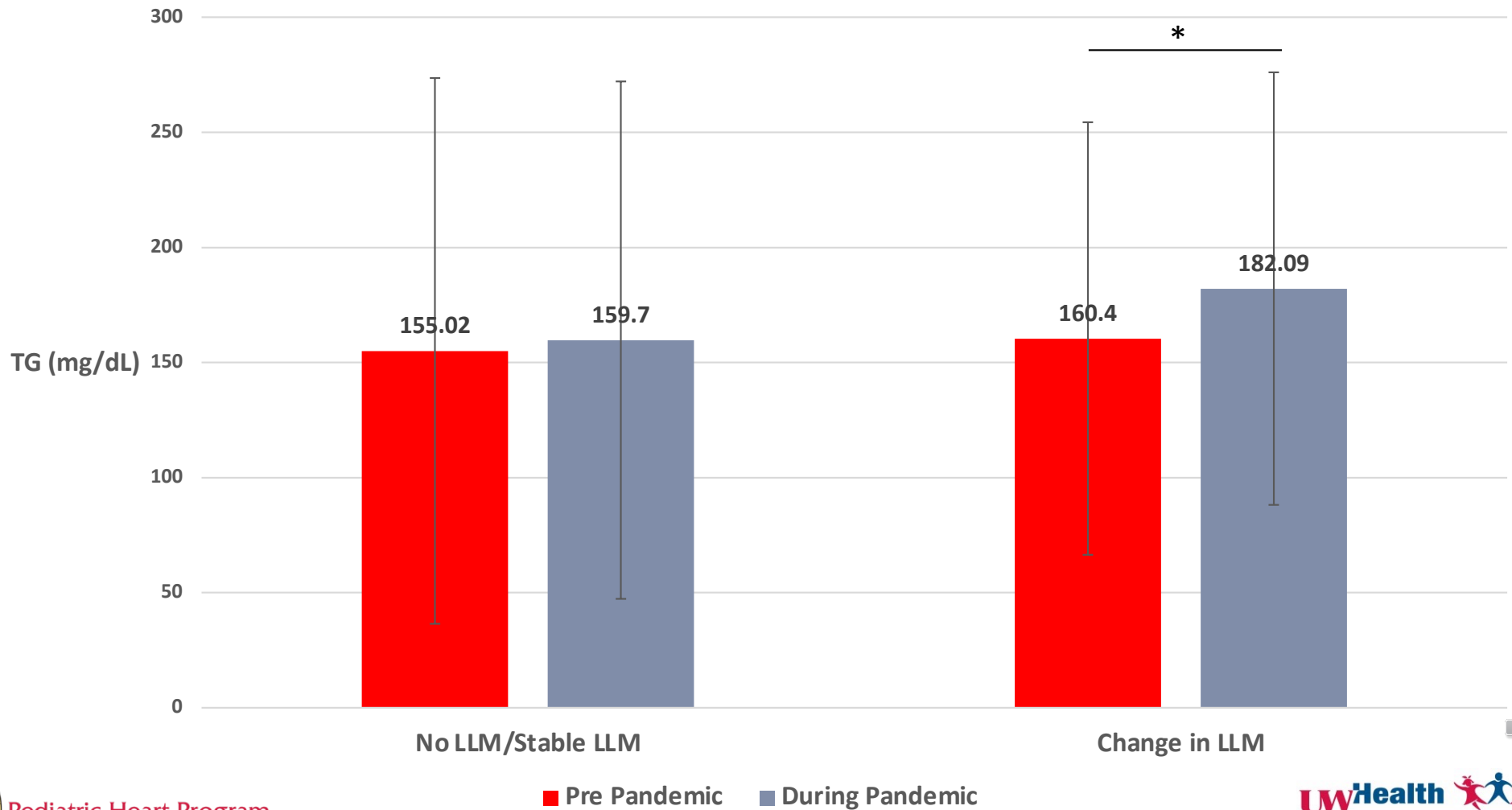
- **Aim 1:** Laboratory values of cholesterol, insulin resistance, and hepatic steatosis
- **Aim 2:** Physical exam findings
- **Aim 3:** Physical activity
- **Aim 4:** Rates of prescriptions of lipid-lowering medications (LLM)

Subjects divided into two groups:

- 1) No LLM or Stable LLM prescriptions
- 2) Change in LLM prescriptions

# Triglycerides Increased During the Pandemic

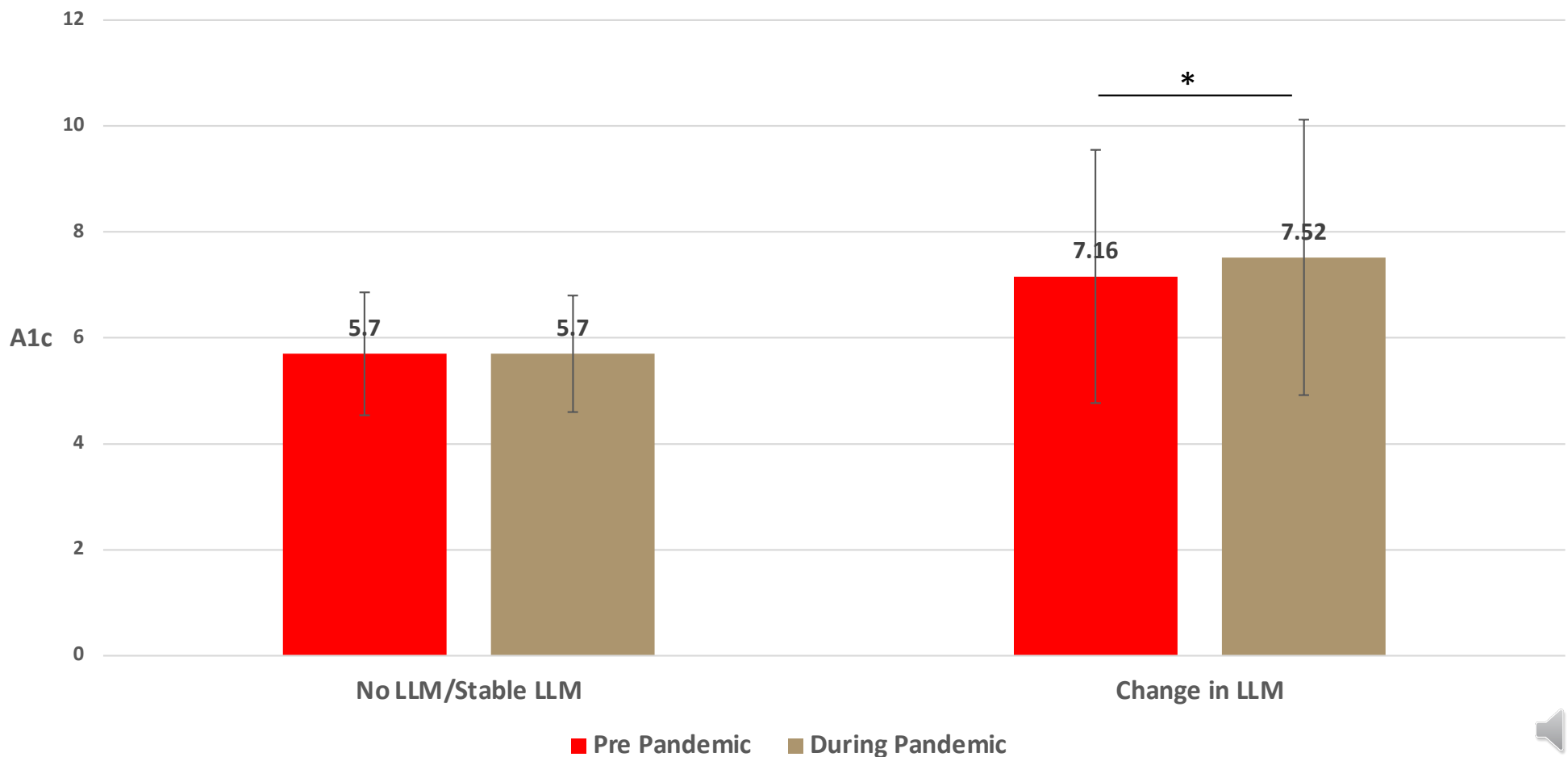
## Increase in TG in subjects with Change in LLM



\* p < 0.05

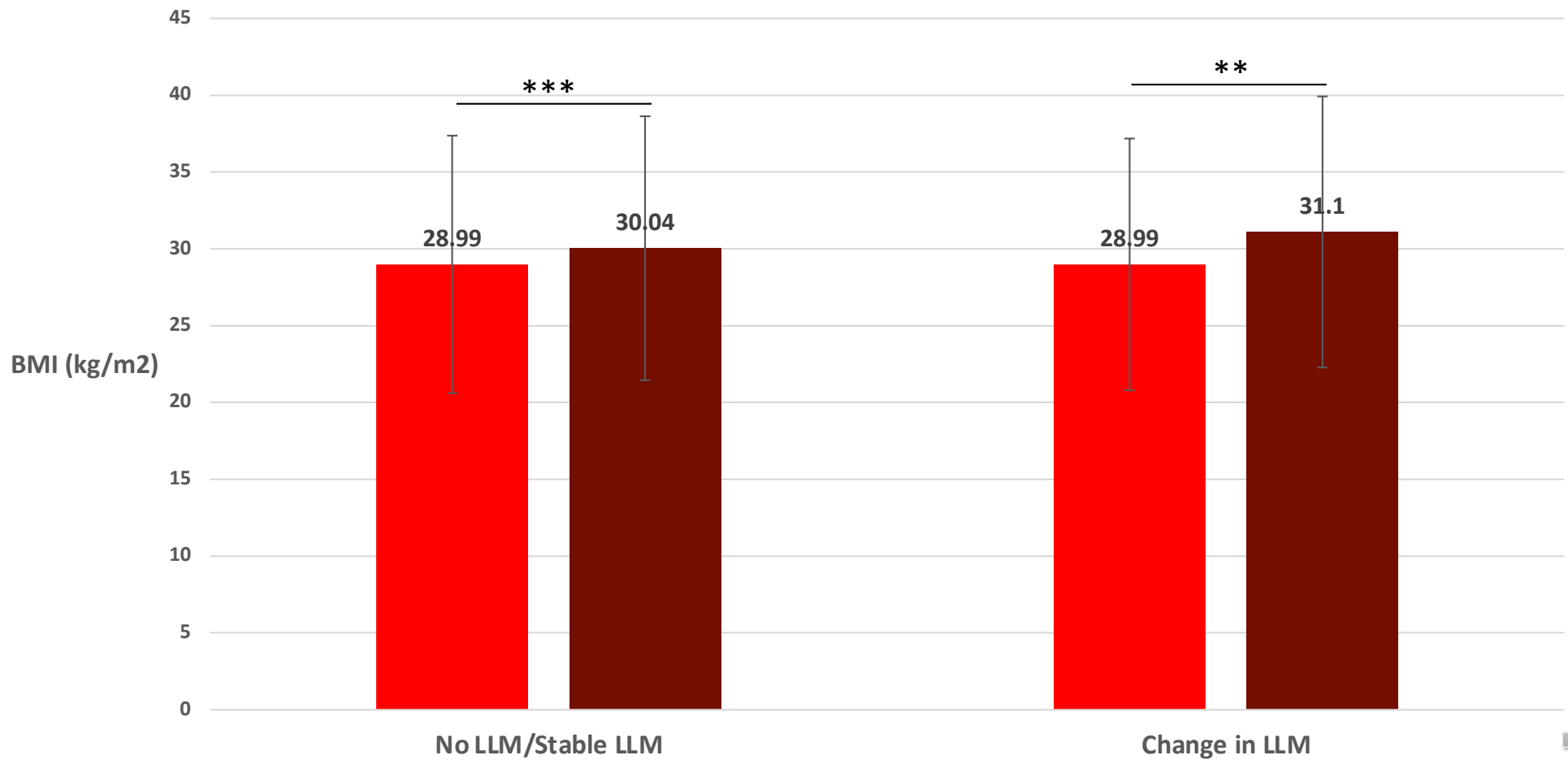
# Hemoglobin A1c Increased During the Pandemic

Increase in A1c in subjects with change in LLM



# Physical Exam Findings Suggest Increased Adiposity During the Pandemic

Increase in BMI during pandemic

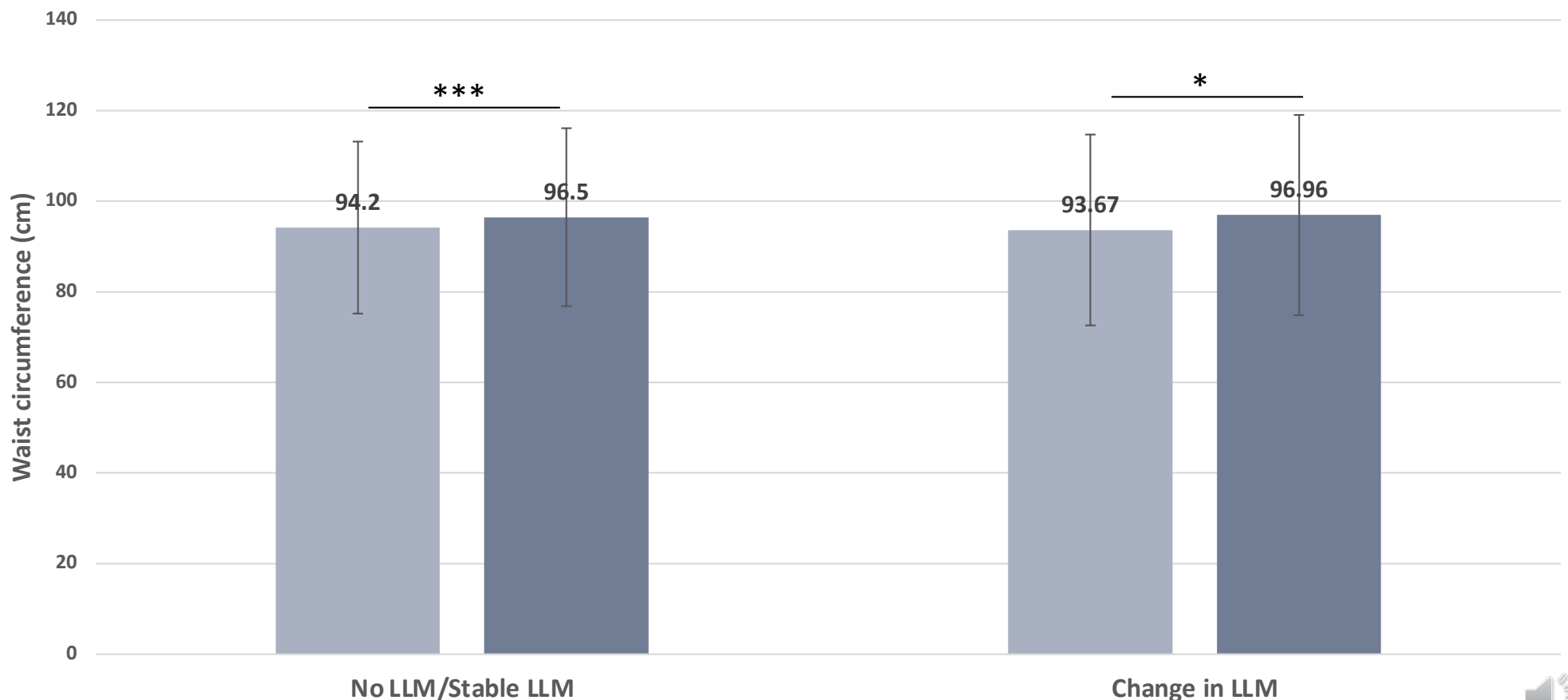


■ Pre-Pandemic ■ During Pandemic

\* < 0.05, \*\* < 0.01, \*\*\* < 0.001

# Physical Exam Findings Suggest Increased Adiposity During the Pandemic

Increase in waist circumference during pandemic

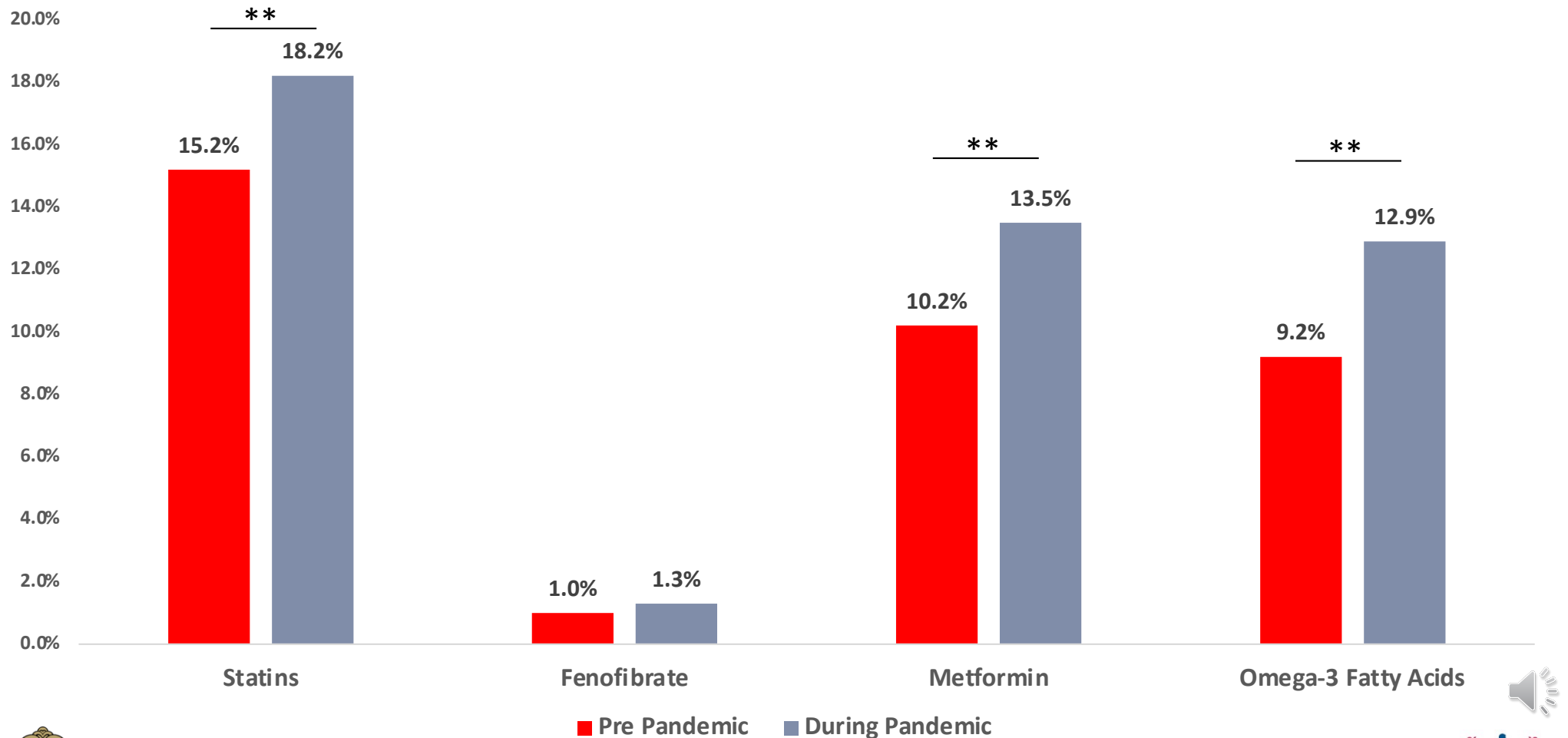


■ Pre-Pandemic ■ During Pandemic

\* < 0.05, \*\* < 0.01, \*\*\* < 0.001

# LLM Prescriptions Increased During the Pandemic

Increase in rates of lipid-lowering medication prescriptions during pandemic





# Conclusion

- Trends towards worsening cardiometabolic health during the COVID-19 pandemic in children.
- Need to screen, diagnose, and treat new onset dyslipidemia, insulin resistance, and diabetes in children in order to help prevent even higher rates of ASCVD in the future.