

# ***Attachment 7***

## ***Developmental Project Report: NHANES Blood Pressure Measurements in Children aged 3-7 years***

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**NHANES Blood Pressure Measurements in Children aged 3-7 years:**  
**2021-2022 Feasibility Study**

Between March and August 2023, NHANES conducted a feasibility study of measuring blood pressure (BP) and pulse in children ages 3-7 years. The primary objective of this study was to assess the feasibility of obtaining three sets of BP and pulse measurements in children ages 3-7 years. The number of parents providing consent and acceptability of the protocol among children was also examined. The results of this project would help determine if future NHANES data collections could include BP and pulse measurements in children ages 3-7 years.

For this exam, participants were properly positioned in a chair. After a three-minute rest period, participants had three sets of BP and pulse measurements obtained, one minute apart. This pilot was conducted in six NHANES locations. This was the first time that NHANES measured BP and pulse in children as young as 3 years old. Historically, NHANES has measured BP and pulse in participants ages 8+ years.

During the feasibility study, 134 children ages 3-7 years were eligible and 8 refused to perform the exam, but the refusal was primarily attributed to lack of time. Approximately 70% of participants ages 3-7 years had three sets of BP and pulse. The device used for the feasibility study generated an error message for approximately 30% of the children, which contributed to fewer children having three sets of BP and pulse measurements. No parent/guardian or child requested the exam to stop for discomfort and no child exhibited verbal or non-verbal discomfort with the BP cuff.

As a result of these findings, the program has begun researching alternative BP devices that could be used to measure BP and pulse, with fewer error messages, in children ages 3-7 years.