

**Title:** Birth Outcomes and Maternal Oral Health in Appalachia West Virginia

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**Abstract:**

**Objectives:** Early and regular perinatal care, including oral healthcare, benefit pregnant women and their babies. The purpose of this secondary data analysis was to determine if self-reported tooth brushing frequency with provided oral hygiene products (Philips Sonicarepower toothbrush, and dentifrice with fluoride) was associated with improved birth outcomes (birthweight and term) and maternal oral health (periodontal screening and recording [PSR]) in Appalachia West Virginia.

**Methods:** The HRSA-funded West Virginia Healthy Start/Helping Appalachian Parents and Infants Project (HAPI) program provided data from 2005-2017. There were 5,143 women in the perinatal program. Nine hundred seven women completed the oral healthcare program by accepting oral health education, dental prophylaxis with follow-up, and oral hygiene products. PSR was completed by a dental professional at an office visit during the woman's pregnancy and after she gave birth. Data analyses of tooth brushing on birth outcomes and maternal oral health were with t-tests or Chi square tests.

**Results:** The mean tooth brushing frequency was 2.47 times/day (SD: 0.70). Six hundred three women (66.5%) had significant improvement in PSR's between the first evaluation (overall mean=1.86 [SD: 0.84]) and second evaluation (overall mean=1.40 [SD: 0.89]),  $t=20.18$ ;  $P<.0005$ .

The mean birthweight was 3,334.44 grams (SD: 0.70). Fifty-two (5.73%) babies had low birthweight (<2500g). The mean gestation age was 38.71 weeks (SD: 2.33). One hundred forty-six (16.10%) babies were born prematurely (at 37 weeks or earlier). Brushing 2+ daily was associated with more babies born with normal birthweight ( $P=.001$ ) and at term ( $P=.025$ ) than brushing less than twice daily; however, brushing 2+ daily failed to reach a significance difference in maternal PSR improvement ( $P=0.193$ ).

**Conclusions:** Women in a comprehensive perinatal care program who also reported brushing 2+ daily had improved birth outcomes.