

The Effects of Persistent Asymmetrical Tonic Neck Reflex (ATNR) on Reading Scores in First and Second Grade Children

Rebecca Montgomery,* Candise Nichols, Chelsey Ornburn, Amanda Rudd,
Lindsey Williams

Faculty: Barbara Smith

Department of Physical Therapy, College of Health Professions

This study examined the relationship between a presence of a retained Asymmetrical Tonic Neck Reflex (ATNR) and its effect on reading scores of local first and second grade children. The ATNR, a primitive reflex seen in infants and normally integrated by 6 months, may be present in children up to age eight. ATNR's retention is associated with certain learning disabilities, behavioral dysfunctions and motor maturation delay. These developmental deficits can also affect reading and motor skills including hand-eye coordination, left-right integration, visual tracking, and the ability to control the hand when writing.

A collection of standardized reading test scores was obtained from 66 first and second grade students. The student sample was additionally tested for ATNR retention level by a licensed school physical therapist. The school from which the participants were selected utilizes the AIMSweb standardized test to assess student reading levels. This standardized test, at a basic level, measures the number of words a student can correctly read per minute. The AIMSweb test efficiently and accurately measures a student's progress because it is time efficient to administer and produces results that intuitively reflect increase in ability. A modified testing procedure was performed by the school physical therapist to obtain a score related with a gradation of ATNR retention level.

The findings showed that there was a significant relationship between total ATNR scores and reading in first grade participants. Those who demonstrated a more integrated reflex, or a higher ATNR score, showed fewer errors and a higher accuracy on the AIMSweb reading test than those with a more persistent ATNR, or lower ATNR score.

The literature is equivocal as to the association between presence of the ATNR in first and second grades and their reading scores. The results support the findings of previous research demonstrating a link between ATNR retention and a lower reading score. These findings suggest that further research is needed in order to establish an effective integration program.