

**Mobile phones: influence on auditory and vestibular systems***Aracy Pereira Silveira Balbani • Jair Cortez Montovani***Abstract Correction**

(450-900 MHz in the analogue system; and 1.8-2.2 GHz in the digital system)

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**Comparative study between school performance on first grade children and suppression of otoacoustic transient emission***Miguel Luiz de Sant'Ana Angeli • J.Clemente Isnard Ribeiro de Almeida • Patricia M. Sens***Discussion inclusion**

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**DISCUSSION**

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Poor performance at school is a source of great concern to parents and teachers. The causes for this deficiency are numerous, such as social, nutritional, family, teaching system, even problems intrinsic to children such as neurologic, psychiatric, psychological, visual and hearing problems, besides a lack of maturation or dysfunction of the cognitive nervous system.

Children with learning disabilities end up having a lower intellectual and social development than their conditions allow. To locate the cause of this deficiency and to overcome it can change their lives. When we observe a reduction in the otoacoustic emission amplitude values evoked by a contralateral sound stimulus, the possibility was considered that such phenomenon could be used to assess, in a practical way, not only the acoustic nerve, but also the auditory system efferent central pathways, certainly connected with auditory communication.

Elementary schools are true laboratories where cognition is assessed. The present investigation aims at comparing the otoacoustic emission amplitude values evoked by the contralateral sound stimulus of the students ranked in first and last in performance from an elementary school at the State of São Paulo.

The efferent pathways were identified and studied by numerous authors<sup>3,4,5,6,12,13</sup>, and contralateral inhibitions suppression was initially studied by Collet<sup>8</sup> and later confirmed by many others<sup>10,14,15</sup>. In 1999, Pialarassi<sup>10</sup> studied the suppression of transient and distortion product otoacoustic emissions with contralateral stimulus by a narrow band noise in 48 individuals with normal hearing and 9 individuals with retrocochlear disease. In the normal group there was significant suppression of otoacoustic emissions. In the group with the disease, sometimes they found mild suppression and sometimes it did not occur, and sometimes there was intensification. The results show that the otoacoustic emission suppression with contralateral stimuli

is a useful tool in the set of procedures used to diagnose retrocochlear auditory disorders.

Laterality is an important factor for the satisfactory performance of multiple body functions, including hearing and auditory processing. Research<sup>16</sup> have shown that the left brain hemisphere prevails over the right side in speech auditory processing; while the right side prevails in the processing of tones and musical stimuli. Kimura<sup>1</sup> states it in a basic research paper published in 1963, that the verbal auditory information presented to the right ear come to the left hemisphere, which is dominant for verbal language, through the contralateral auditory pathways, going through the commissure of the corpus callosum. In the sample analyzed, we could learn that the auditory inhibition disorder manifestation by a simultaneous contralateral stimulus manifested clearly and significantly when hearing was assessed on the right ear.

The meaning of this observation is, to start with, an indication that if this test is used in the study of auditory processing disorders, it must be made with a stimulus being presented to the right ear and a competitive sound in the left contralateral ear. The same thinking must be used when we rehabilitate individuals with auditory processing disorders, especially those that have concurrent auditory impairment, giving preference to amplification and rehabilitation stimuli in the right ear.

Tests such as SSW were applied to identify auditory processing problems in school-age children. In 1984 Berrick et al<sup>17</sup> studying the performance of 93 children without learning complaints and 97 children with learning disabilities, in the age range between 8 and 11 years by the SSW test, observed that the children without school complaints presented a statistically significant better performance when compared to those children with learning disorders, stressing the usefulness of the SSW test in the hearing function of the children with learning difficulties. The same was observed by Almeida<sup>18</sup> using the PSI test adapted to Portuguese by Almeida<sup>19</sup>. These tests proved efficient and in certain ways objective; however, their application requires complex equipment. Both SSW and PSI are screening tests which are not specific for the type of auditory processing deficiency; however, very safe in relation to the results. Later studies must be applied to a similar group, with SSI and SSW tests, besides the suppression failure study in order to validate the importance of this research in the diagnosis of processing dysfunction, as it was stressed in the introduction, hearing processing is not the only cause of learning disorders.

Musiek and other authors<sup>20,21,22</sup> observed that central auditory processing disorders are, usually, cortical or sub-cortical dysfunctions that can be secondary to maturation delays or morphological abnormalities.

The possibility of using a simple screening test for children with low school performance in an attempt to identify those with processing problems, is important to indicate the need to refer these students to more complex tests and finally guide their rehabilitation.

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Our study showed very stimulating results as to the chances of obtaining a low and efficient test with a reasonable predictive value to identify auditory processing potential disorders. We need longitudinal tests with larger cohorts and broader samples to assess test specificity and sensitivity. The confirmation of learning disorders with children that have previously been considered of risk may turn this test into an accurate and mandatory instrument in the assessment of pre-school age children.

Knowing that the children with auditory processing dysfunction, when properly diagnosed, may be rehabilitated without speech and hearing training, changing not only their immediate school performance, but also the life style and quality of these children in the long run is a powerful stimulus to carry out new studies in this filed.

Future studies with larger series and comparing the results with SSI and SSW are necessary to validate this method as useful in the screening of children with auditory processing disorders among those with learning disorders.

#### **Intracanalicular meningioma: diagnostic by immunohistochemistry**

*Andrei Borin • Daniel Mochida Okada • Oswaldo Laércio Mendonça Cruz*

Correction:

MRI showed a tumor occupying the IAM, with an image suggesting vestibular schwannoma (VS) (Figure 1).

#### **Should read:**

MRI showed a tumor occupying the IAM, with an image suggesting vestibular schwannoma (VS).