

**Effect of VibroAcoustic Therapy on Children with Autism**  
**A Case Study**

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*Summary Presentation*  
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## *Abstract*

Vibro Acoustic Therapy (VAT) is a form of receptive music therapy employing the physical properties of sound and vibration, pulsed sinusoidal, low frequency sound between 30 Hz and 80 Hz combined with relaxing music and is played through transducers built into a bedpad. The therapy is the outcome of a landmark meeting between Juliette Alvin (U.K.) and Olav Skille (Norway) in 1968 and was subsequently introduced in 1980 by Olav Skille, the inventor, to treat various physical and psychological conditions. Since then several studies have been done in Europe and USA on different patient populations and consequently VibroAcoustic Therapy is regarded as an effective therapeutic tool in many countries. However effect of VAT on autistic children is not adequately studied. Aim of the study was to examine the effect of VAT on autistic children. 6 autistic children were exposed into 2 therapeutic sessions per week for 8 consecutive weeks; each session lasted for 23 minutes for 8 weeks. They had various problems like hyperactivity, poor eye contact, stereotype behaviors, lack of attention and emotional expression, etc. During the study, few well recognized psychological instruments as Vineland Social Maturity Scale (Vineland, 1936) Indian adaptation by Dr. A. J. Malin, Gilliam Autism Rating Scale, Autism Behavior Anchor Rating Scale were administered before and post therapeutic sessions. Scores on all the three scales in post-therapy sessions were higher than pre-therapy sessions suggesting effect of VAT on changes in autistic behavior.

## **Effect of VibroAcoustic Therapy on Children with Autism: A case Study**

### Summary Presentation

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Autism is a brain development disorder that impairs social interaction and communication, and causes restricted and repetitive behavior, all starting before a child is three years old. This set of signs distinguishes autism from milder autism spectrum disorders (ASD) such as Asperger syndrome. The Diagnostic and Statistical Manual of Mental Disorders, DSM-IV (American Psychiatric Association, 1994) defines autism as a pervasive developmental disorder characterized by: (a) impairments in communication and social interaction and (b) restricted, repetitive, and stereotypic patterns of behaviour, interests, and activities. Structured teaching, speech and language therapy, social skills therapy and occupational therapy are some common modes for treatment of autistic behaviour. Some popular therapies are (a) Applied Behavior Analysis, (ABA) (b) Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) (c) Picture Exchange Communication Systems (PECS) (d) DIR (Developmental, Individual-Difference, Relationship-Based)/Floortime, (e) Relationship Development Intervention (f) Facilitated Communication (g) Social Stories, (h) Sensory Integration Therapy and (j) Music Therapy. No therapy is the single solution for autism. The common goal of all therapies is to customize therapy according to student needs.

Autistic children like music (Alvin, 1978) and vibrations (Williams, 1996). Therefore manipulation of vibration is assumed to be one of the treatment procedures. Since, VibroAcoustic Therapy is based on manipulation of vibrations; effect of this therapy on management of autistic behaviour was systematically examined in this study.

### **Methods**

#### *Sample*

6 autistic children (boy=3, girl=3) of different age groups participated into this study voluntarily. Their average chronological age was 8.18 with SD 2.58 years. All of them were diagnosed as autistic children by the psychiatrists of the Govt. managed hospitals. Out of 6 students, only 1 child's IQ could not be estimated. Except her, average IQ before training using Seguin Form Board test was 49 with SD 10.15.

## Tools

- (a) Vineland Social Maturity Scale: It is used to assess change in social maturity level due to effect of therapy.
- (b) GARS 2: It is a screening instrument used for the assessment of individuals aged 3 through 22 who have severe behavioral problems that may be indicative of autism. It is based on the definition of autism adopted by the Autism Society of America (1994) and diagnostic criteria for autistic disorder published in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV) of American Psychiatric Association. Because the GARS 2 measures behaviors based on their frequency, it provides useful data for quantifying the frequency and severity of autistic behavior. The scale has 42 clearly stated items which are divided into three subscales: (a) Stereotyped Behaviors, (b) Communication and (c) Social Interaction. The items are based on the most current definitions of autism. Each item has 4 observation marks: Never Observed [0], Seldom Observed [1], Sometimes Observed [2] and Frequently Observed [3]. The behaviours are rated using objective frequency-based ratings. All 14 items in a subscale must be scored. Raters should encourage an individual to communicate; but if after 2 weeks of effort the individual still makes no attempt to communicate the examiner should omit the Communication subscale from the evaluation.
- (c) Autistic Behavior Anchor Rating Scale : It includes 4 statements developed on the basis of behaviour anchor rating scale procedure (Vide appendix)

## Results

### *Change in social maturity*

After therapy, notable changes were found in all the areas of social maturity. This is especially high in case of self help eating (mean difference = 11.50, SD=5.65) and socialization (mean difference = 17.00, SD=15.28). High SD suggests high within group differences between pre and after therapy.

Table 1 Pre-post difference in social maturity scale

	Pre		Post		Difference	
	Mean	SD	Mean	SD	Mean	SD
SA	31.60	15.38	40.13	20.20	8.53	4.83
SQ	32.66	14.69	41.12	19.58	8.46	4.89
SHG	35.83	12.97	41.33	15.96	5.50	2.99
SHE	31.00	10.97	42.50	16.62	11.50	5.65
SHD	38.40	11.24	47.60	11.15	9.20	-0.09
OCC	28.33	16.01	35.00	17.42	6.67	1.42
COM	19.50	11.86	26.33	19.49	6.83	7.63
LOC	35.00	15.61	40.50	14.08	5.50	-1.53
SOC	14.00	0.00	31.00	15.28	17.00	15.28

### *Change in Autism Index*

Table 2 shows change in autism index level after therapy. Before therapy, average autism index was 101.83 with SD 8.11 and after therapy it was 73.33 with SD 7.03. This suggests change in autism due to vibroacoustic therapy.

Table 2 Change in Autism Index of GARS – II

	Pre	Post
Ralph	118	76
Sonai	100	76
Arghya	100	68
Priya	100	85
Souvanik	97	67
Meghna	96	68
Mean	101.8333	73.33333
SD	8.109665	7.033254

### *Change in Autistic Behavior*

Table 3 shows change in autistic behaviour across the therapeutic sessions of 8 weeks. Figure 1 denotes that change mainly occurs from 3<sup>rd</sup> week of session. In only one case change occurred from 2<sup>nd</sup> week. In each therapeutic session, change follows plateau. In 3 cases change shows plateau.

Table 3  
Parents rating on autistic behaviour for 8 weeks

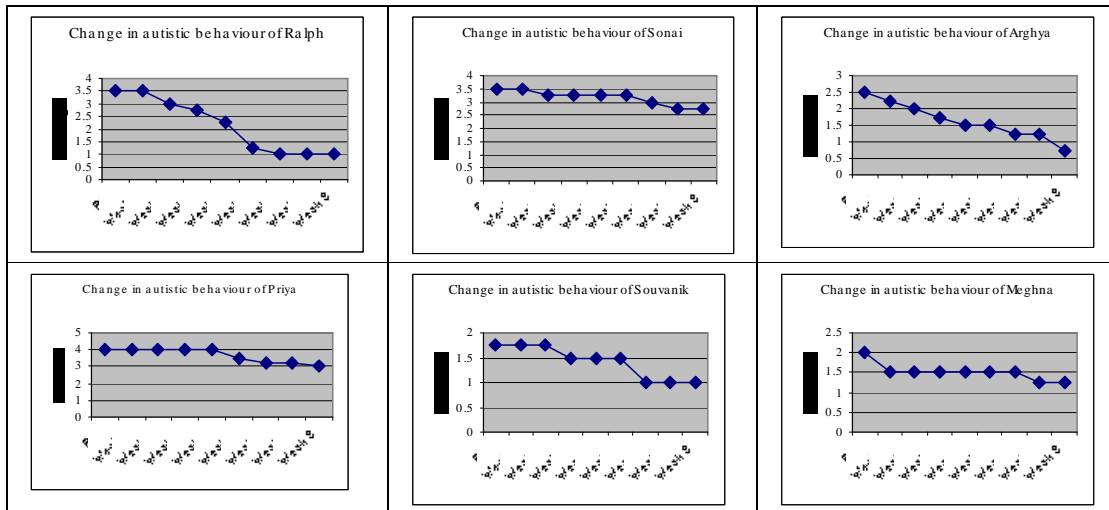
Name	Average								
	BP*	Week1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Ralph	3.5	3.5	3	2.75	2.25	1.25	1	1	1
Sonai	3.5	3.5	3.25	3.25	3.25	3.25	3	2.75	2.75
Arghya	2.5	2.25	2	1.75	1.5	1.5	1.25	1.25	0.75
Priya	4	4	4	4	4	3.5	3.25	3.25	3
Souvanik	1.75	1.75	1.75	1.5	1.5	1.5	1	1	1
Meghna	2	1.5	1.5	1.5	1.5	1.5	1.5	1.25	1.25

\* Baseline, before therapy

To sum up, current study revealed that VibroAcoustic Therapy treatment caused changes in autistic behaviour of children.

Figure 1

Change in autistic behaviour across weeks



Ref:

Alvin, J: Music Therapy for the Autistic Child, Oxford University Press (1978)  
Williams, D.: Autism, an Inside-out Approach, Jessica Kingsley Publishers (1996)  
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Gilliam, James E. (1995). Gilliam Autism Rating Scale Second Edition, Pro-Ed Inc.  
O. Skille and T. Wigram: The Effects of Music, Vocalisation and Vibrations on Brain and Muscle Tissue: Studies in Vibroacoustic Therapy, The Art and Science of Music Therapy: Tony Wigram, Bruce Saperston, Robert West (Eds.), Routledge: Taylor & Francis Group, London (1995)

Detailed Study Report is available from:  
Step One Foundation for Child & Youth Welfare  
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