1. **CLINICAL BOTTOM LINE:**

Verb Network Strengthening Treatment (VNeST) may be effective in achieving clinically significant improvements at single word and sentence level in some clients with chronic aphasia when delivered on an intensive basis (2 hours or more, 3 times a week for a total of 8 weeks). The improvements were achieved in both traditional clinical settings and when VNeST was provided via telehealth methods. A number of studies show generalisation may occur to untreated words and to connected speech (discourse analysis of picture description tasks) when using VNeST, however there appears to be no clear pattern of generalisation across outcome measures.

Some emerging trends were identified, for example, participants with greater pre-treatment difficulty with verb retrieval at sentence level showed larger gains in constrained sentences post treatment, however less improvement in discourse; while participants with greater difficulties with noun retrieval at pre-treatment showed an opposite trend post-treatment. The significance of these trends is unclear. In some studies improvements were not maintained at the follow-up phase. There is no clear pattern to predict improvement in relation to severity of aphasia impairment, however there appears to be a trend that VNeST may be most suitable for clients with mild to moderate chronic aphasia. Clients with moderate to severe aphasia took twice as long to reach the same gains.

There is no clear pattern to predict improvement in relation to aphasia type, with improvements in many language domains reported for participants with fluent and non-fluent types of aphasia. One study reported VNeST was successful for a participant with Wernicke's type aphasia, however further research is needed. Further research with a higher volume of participants would more resolutely determine treatment effects. Direct comparison of Verb Network Strengthening Treatment (VNeST) to other treatment approaches was unable to be made, as there are currently no published studies that compare VNeST to other aphasia treatments.

It must be noted that the 5 articles reviewed were authored by the same researcher and/or her research group.

2. **Clinical [PICO] Question/s**

1. **Does VNeST improve the sentence production in clients with aphasia?**

2. **Does treatment using VNeST show generalization effects to untreated items and connected speech?**

3. **Is VNeST most suitable for clients with mild, moderate or severe aphasia?**

3. **Search Terms/Systems:**

Group members individually searched for relevant published articles using online search methods via accessible databases. Databases used for searching included: Aphasiology Online, Cinahl, CSA, Embase, Google Scholar, Medline, OvidSP, Proquest, PsychInfo, Pubmed and SpeechBite.

Search terms used were: “VNeST”, “verb therapy”, “verbs” and “verb treatment”

**Criteria for including the article:**

Papers were excluded if they were more than 15 years old, unpublished or were published in a language other than English.
4. Quantity of the evidence based:
Number of papers identified: 19
Number of suitable papers actually capped: 5

It must be noted that the 5 articles reviewed were authored by the same researcher and/or her research group. Another article found was a tutorial on how to use the VNeST treatment protocol by the same research group.

5. Overall level of the evidence base:

I ______ II ________ III-1 _______ III-2 _________ III-3_________ IV ✓

6. Nature of the evidence base:

Feasibility Efficacy ✓ Effectiveness

7. Overall findings from the evidence base are:

☐ compelling ✓ suggestive ☐ equivocal

Comments: See clinical bottom line

8. Results:

The 5 articles capped reported single case design research studies with multiple baseline approaches. All except one comprised of 3-4 phases – Baseline; Treatment; Post-treatment probes, Maintenance probes (3-5 months post treatment).

The participants in each of the studies varied in their type of the aphasia and in the severity of their aphasia. The exclusion criterion for participants was consistent across the studies.

The treatment dosage varied only slightly, being 2 or 3 times/week for 8 to 10 weeks. All treatment sessions were 2 hours in duration.

The VNeST treatment protocol was used consistently. One study conducted the program via telerehabilitation over the internet. Another study added spoken verb retrieval to the protocol. A detailed outline of the treatment can be found here:


All studies capped reported positive outcomes for people with aphasia. The articles reported clinically significant improvements at single word and sentence level in some clients with chronic aphasia. The improvements were achieved in both traditional clinic settings and telerehabilitation. A number of studies showed generalisation may occur to untreated words and to connected speech however there appears to be no clear pattern of generalisation across outcome measures.

Some emerging trends were identified, including that participants with greater pre-treatment difficulty with verb retrieval at sentence level showed larger gains in constrained sentences post treatment, however less improvement in discourse; while participants with greater difficulties with noun retrieval at pre-treatment showed an opposite trend post-treatment. In some studies improvements were not maintained at the follow-up phase. There is no clear pattern to predict improvement in relation to severity of aphasia impairment, however there appears to be a trend that VNeST may be most suitable for clients with mild to moderate chronic aphasia. Clients with moderate to severe aphasia took twice as long to reach the same gains. It was unclear whether cognitive factors may have impacted on each participant’s results.

There is no clear pattern to predict improvement in relation to aphasia type, with improvements in many language domains reported for participants with fluent and non-fluent types of aphasia. One study reported VNeST was successful for a participant with Wernickes type aphasia.
Results continued: Assessment results for each participant pre and post were collated and effect size compared in 4/5 studies. (Effect size is the difference in scores divided by the standard deviation – it calculates the magnitude of change from baseline to post treatment measures). Caution must be used when interpreting these results, as a small raw score change can be magnified to be significantly different when baseline scores are small to begin with.

It must be noted:
- no studies used a control group but control tasks/untrained tasks were used in 2 studies
- assessors in each study were not blinded

No studies were found comparing VNeSt with another treatment for verbs.

9. Recommendations:

Is evidence from current clinical practice the same as clinical bottomline?
☐ Yes (the CAT is now complete) ☐ No ✓ Undecided

Undecided because:
- Further research is needed as the 5 articles reviewed were authored by the same researcher/research group
- more evidence on clinical practice is needed
- Change should be considered to current clinical practice

10. Application to practice (when change has been indicated):

 ✓ Change should be considered to current clinical practice, and it is possible

VNeSt treatment protocol is worth considering when you have a client with aphasia who:
- Has verb and noun naming impairment at single word and sentence level
- Enjoys structured therapy
- Has mild-moderate aphasia
- Has any aphasia type, including Wernicke’s aphasia

VNeSt is somewhat replicable in clinical practice but given the intense treatment protocol and time required to prepare and conduct it, it may be appropriate to consider in a rehab or outpatient setting.
References:


