**Vagus Nerve Stimulation (VNS) Pathway**

VNS is indicated for use as an adjunctive therapy in reducing seizure frequency in patients who are refractory to anti-epileptic medication. This includes patients who have refractory focal seizures (with or without secondary generalisation) or generalised seizures. NICE (2004, 2012)

NICE Guidance on VNS for children with refractory Epilepsy <https://www.nice.org.uk/guidance/ipg50>

Epilepsy care managed locally (secondary level)

Referral to Tertiary Vagal Nerve Stimulation Service (this should be agreed by relevant supporting paediatric neurologist) Criteria: refractory epilepsy, x2 drugs failed, not suitable for Ketogenic diet or epilepsy surgery

Referral triaged by the Paediatric Neurology Consultant, lead for VNS service. Referral scanned on to Epic by admin team – Lead Consultant & epilepsy nurse supporting VNS to be aware of referral

NO

If Not suitable- patient will be referred back to local Secondary level care with advice

YES

Add to VNS waiting list then appointment to be allocated for VNS assessment- hour appointment required with Neurologist & supporting Epilepsy Nurse

VNS assessment with Paediatric Neurologist & supporting Epilepsy nurse. Discussion & information provided for Vagal Nerve Stimulation device. Information covering the pathway, device functionality, side effects, follow up

Seizure frequency & other parameters to be assessed.

Measurable outcomes to be identified

Decision to be referred to Neurosurgeon for VNS consideration

NO

Patient referred back to local secondary level care with recommendations

YES

Neurology consultant will refer to neurosurgical consultant for consideration for implantation of the device

Appointment with Neurosurgical consultant for surgical consideration for implantation of VNS. Neurosurgical Consultant will discuss the procedure, consent & admission

Neurosurgical nurse to be aware and liaise re PROAC and

(Pre-operative assessment clinic) & admission

To be placed on waiting list for surgery under Neurosurgery Team.

Neurosurgery to inform Neurology team regarding admission date

VNS device inserted generally as day case. Clerked by SHO Neurosurgery, seizures to be documented on EPIC seizure chart throughout inpatient stay by ward nurses.

Anti- epileptic medications to continue as normal. Neurosurgeon will check the device is functioning in theatre it will be set on no output (0.0 milliamps)

Neurosurgical Nurse Specialist to support admission, discharge information leaflet to be provided from Merlin. Discharged when safe to do so, discharge letter to be completed by Neurosurgical team.

Safety guidance No MRI to be carried out for 2 weeks following insertion.

Order to be placed for 2 weeks follow up with epilepsy nurse who supports VNS to turn the device on & commence programming schedule for those who need device to be activated

Sentiva device can be programmed for remote increase every 2 weeks to improve patient journey/experience & reduce travel to the hospital setting for 7 steps, this should be in conjunction with Nurse Telephone consultation at each step

VNS Magnets to be provided for the family

Discharged from neurosurgery

**Author:** Zoya Dowd, Paediatric Epilepsy Nurse Specialist, Cambridge University Hospital, June 2021

**APPENDIX:**

An Introduction to VNS Therapy <https://www.vnstherapy.co.uk/healthcare-professionals/sites/vnstherapy.com.healthcare-professionals/files/downloads/vns-therapy-patient-brochure.pdf>

VNS How it Works <https://www.vnstherapy.co.uk/healthcare-professionals/#how-it-works>

Sentiva Overview <https://www.vnstherapy.co.uk/healthcare-professionals/sites/vnstherapy.com.healthcare-professionals/files/LIVADirectMailFinal-%20Download%20PDF_0.pdf>

VNS Therapy Overview <https://www.vnstherapy.co.uk/healthcare-professionals/sites/vnstherapy.com.healthcare-professionals/files/VNS_Therapy_Overview_with_SenTiva.pdf>

VNS Magnet Leaflet <https://www.vnstherapy.co.uk/healthcare-professionals/sites/vnstherapy.com.healthcare-professionals/files/downloads/VNS%20Therapy%20Magnet%20.pdf>

For MRI information with VNS <https://vnstherapy.com/healthcare-professionals/file/162/download>

VNS Dosing Guidelines <https://www.vnstherapy.co.uk/healthcare-professionals/sites/vnstherapy.com.healthcare-professionals/files/VNS_Dosing_Guide_Digital_June%202016.pdf>

Patient Manual can be accessed <https://vnstherapy.com/patient-resources/>