

Telemedicine in patients with epilepsy

What to ask for?

Studies of people with epilepsy (PWE) show that many perceived significant disruption in the quality and availability of care (31% to 95%), as well as increased stress and social isolation, and increase in seizure frequency (6% to 35%) since the onset of the COVID-19 pandemic.¹⁻⁶ During this pandemic, telemedicine has been increasingly utilised with broad acceptance among patients and clinicians. Studies related to patient care quality and management have shown no significant differences compared with face-to-face consultation in some settings⁷⁻⁹. People with epilepsy require special attention to specific items at teleconsultation. An orientative script of a telemedicine interview is shown here, highlighting the most relevant aspects that we, as healthcare professionals treating PWE, should not forget.

We need to consider that for many patients, telehealth consultations will be new. It is important to be clear about the format of the consultation in advance, and what to expect. Clear information on how to access the consultation is important, as well as what information they should have ready to discuss with their physician. Simple instructions about pre-consultation questionnaires should also be available. When approaching the tele-consultation of a patient with epilepsy, it is important to determine whether it is a first clinical encounter (a first consultation) or a patient under follow-up, since each will present somewhat different needs. The consultation should be established by telephone or by video call systems as ideal. It could also be undertaken by e-mail or another non synchronous telecommunication route such as text message (SMS) although legal restrictions in some countries, and the lack of synchrony makes communication difficult.

During the first telephone consultation with a PWE, it is important to establish a good doctor-patient relationship, clarify what having epilepsy means, and establish real expectations according to the type of epilepsy and the treatment prescribed. Clinicians should bear in mind the most frequent comorbidities in PWE, with special attention to mood disorders, potential drug adverse-effects, interactions with other medications, and previous comorbidities and its prescriptions.

Similarly, in tele-consults with adult patients, it is of particular benefit to have a person who knows the patient available during the interview, as this helps clarify questions and avoid misunderstanding treatment plans and instructions.

Utilisation of standardised questionnaires in advance of the consultation are a very useful tool that facilitates communication and helps to avoid missing important aspects.

In adults the following could be utilised:

NDDI-E	A six-item epilepsy-specific depression questionnaire with excellent sensitivity and specificity to detect depressive disorders, including suicidality (Gilliam et al 2006; Mula et al 2016) A score of 13 points or higher in the NDDI-E has a high sensitivity for depression, and a score of 3 or higher on item 4 of the NDDI-E is a valid marker of suicidality (Gill et al 2017)
GAD-7	A 7-item, valid tool to assess anxiety (Spitzer et al 2006). Scores of 5, 10 and 15 represent mild, moderate and severe anxiety, while a score of 10 has the highest accuracy for anxiety disorder.
QOLIE-10	A well-known, brief tool that provides the patient’s global perspective of their quality of life.

Gilliam FG, Barry JJ, Hermann BP, Meador KJ, Vahle V, Kanner AM. Rapid detection of major depression in epilepsy: a multicentre study. *Lancet Neurol.* 2006 May;5(5):399-405

Mula, M., McGonigal, A., Micoulaud-Franchi, J. A., May, T. W., Labudda, K., & Brandt, C. (2016). Validation of rapid suicidality screening in epilepsy using the NDDIE. *Epilepsia*, 57(6), 949–955.) <https://doi.org/10.1111/epi.13373>

Gill SJ, Lukmanji S, Fiest KM, Patten SB, Wiebe S, Jetté N. Depression screening tools in persons with epilepsy: A systematic review of validated tools. *Epilepsia* 2017 May;58(5):695-705.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Arch Intern Med*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092> .

In children the following could be utilised:

Strength and Difficulties Questionnaire (SDQ)	A brief behavioural screening questionnaire, is freely available in many languages https://sdqinfo.org/py/sdqinfo/b0.py
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Finally, it may also be helpful for clinicians to ask patients at the end of the consultation how they felt the consultation went, to provide feedback for further services.

Medications and dosages:

The importance of knowing exactly the type of medications and dosages cannot be overemphasized. This can be difficult if the patient or caregiver does not have this information readily available during the interview. For both adults and children, asking to have a list of their current medications and dosages ready prior to the tele-consult will avoid miscommunication and facilitate assessment and treatment plans.

First Consultation

History of Epilepsy	Adults and Children
	Clinical description of the seizures by patient or witness; use of videos where available
	Triggers to events
	Seizure frequency, history of clusters/status epilepticus
	Longest seizure free interval, date of last seizure
	Epilepsy risk factors eg Stroke, CNS infections, CNS trauma, perinatal brain insults, autoimmune conditions, Brain tumour, other CNS insults including hypoxia/ischemia, known developmental disorders.
	Video of events (always request within the corresponding legal framework, the possibility of recordings of the episodes)
	Current and previous antiseizure medications related to epilepsy. For current antiseizure medications include dosages. For all medications list maximum dose tried, side-effects, and any reason for discontinuation.
	Previous epilepsy surgery
	Other epilepsy therapies tried (e.g VNS, DBS, dietary therapies, CBD)
	Family history of seizures, epilepsy and neurological disorders

Personal History	Adults	Children
	Current medications for other conditions	Current medications for other conditions
	Drug allergies	Drug allergies
	Developmental milestones/educational history	Developmental milestones/educational history
	Previous and current medical and psychiatric comorbidities	Previous and current medical and psychiatric comorbidities
	Use of alcohol, smoking and recreational drug use	

	<p>Social situation (driving, employment, education, living/marital situation (independent, dependent, etc)).</p> <p>All the cited items will allow us to have a holistic idea of the patient guiding us to considering one or another antiseizure drug and guide subsequent follow-up with special attention to those most vulnerable distinguishing characteristics of the patient.</p>	<p>Social situation (driving, employment, education, living/marital situation (independent, dependent, etc)).</p> <p>All the cited items will allow us to have a holistic idea of the patient guiding us to considering one or another antiseizure drug and guide subsequent follow-up with special attention to those most vulnerable distinguishing characteristics of the patient.</p>
	<p>Special situations (ex. Pregnancy, breastfeeding, etc). In all women in reproductive age ask about pregnancy, contraception, use of folic acid.</p>	<p>Special situations (ex. Pregnancy, breastfeeding, etc). In all women in reproductive age ask about pregnancy, contraception, use of folic acid.</p>

Medical and psychiatric comorbidities	Adults
	Mood and anxiety disorders (recommend using standardized questionnaires -see above)
	Suicidal ideation (recommend using standardized questionnaire -see above)
	Bone health, use of vitamin D

Lifestyle	Adults	Children
	Life habits (e.g. sleep, lifestyle)	Life habits (e.g. sleep, lifestyle)
	Recommendations on safety (e.g. swimming, bathing)	Recommendations on safety (e.g. swimming, bathing)
	Recommendations on legal aspects (driving, handling of weapons, work environment, etc.)	
	Guidance on how to deal with a new seizure and when to consult usual neurologist or emergencies	Guidance on how to deal with a new seizure and when to consult usual neurologist or emergencies

	Importance of adherence; discussion about pros and cons of treatment, implications of treatment options. Instructions on titration, how to deal with potential adverse effects	Importance of adherence; discussion about pros and cons of treatment, implications of treatment options. Instructions on titration, how to deal with potential adverse effects
	SUDEP	SUDEP

Patient's area	Adults and Children
	Space for resolution of patient's doubts
	Recommendations for treatment; implications of treatment options. Instructions on titration, how to deal with potential adverse effects

Follow-up consultation

Seizures	Adults and Children
	Clinical description of seizures; use of video where possible. Has there been any change in their pattern or frequency?
	Frequency. Seizure diary. Triggers
	Emergency situations (seizure accident, prolonged seizures or status epilepticus, recurrent seizures)

Treatment	Adults and Children
	Current antiseizure medication
	Review the patient's medication (avoid interactions with drugs for other etiologies)
	Adverse effects
	Discuss therapeutic adherence

Comorbidities	Adults and Children
	Behaviour/mood disturbances
	Cognition/learning
	Suicidality
	Others

Lifestyle	Adults	Children
	Reminder on social aspects that concern the patient: family issues, work, driving, weapons, sport, disability, social	Reminder on social aspects that concern the patient: family issues, work, driving, weapons, sport, disability, social

	relationship, security measures, etc	relationship, security measures, etc
	In all women in reproductive age ask about pregnancy, contraception, use of folic acid.	
	Use of vitamin D for bone health	

Patient's area	Adults and Children
	Doubts and questions about living with epilepsy
	Recommendations for treatment; implications of treatment options. Instructions on titration, how to deal with potential adverse effects

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