

# DENTAL CARE FOR PATIENTS WITH NEUROLOGICAL DISORDERS

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## ABSTRACT

Preventive dental care for patients with neurological disorders needs a specific approach, due to the fact that these patients belong to the class of patients with special needs. The specific aspects of the neurological disease, the side-effects of the neurological medication on the oral cavity and not least the compliance and bootstrapping difficulties of the general stomatological recommendations with view to maintaining oral hygiene and to professional care during the recall system (follow-up) are only a few particular aspects for this group of patients.

We consider necessary to individualize dental care according to the type and gravity of the neurological disease, the neurological medication, the age of the patients and their dental status, in order to increase the quality of life for patients suffering from neurological disorders.

**Key words:** dental care, neurological disorders, oligosialia, xerostomia

The neurological diseases sum up an impressive number of symptoms and distinct entities, covering a large number of patients with different ages.

The particularities of these affections as well as the prescribed medication, confront the dentist with additional difficulties which are part of his communication with the patient, including the effects of oligosialia or xerostomia, respectively the incidence of the oral diseases.

The hyposialia or xerostomia is maybe one of the most important aspects with consequences on the dental status and oral mucosa. If the salivary flow is reduced, the remineralization process is impaired and new dental caries may easily appear, including root caries. The normal salivary flow helps to maintain the integrity of the oral mucosa (Table 1).

The reduced salivary flow contributes to a decrease in the resistance of the oral mucosa, for example when it comes to a prosthetic trauma, the adjunct dentures losing their stability due to the absence of the saliva pellicle needed for the adhesion phenomenon (9).

The malign disease is also encouraged by the presence of some chronic irritations.

The xerostomia, which is pretty frequent with elder persons or with patients who use MAOIs (Monoamine Oxidase Inhibitors) for depression, Parkinson’s disease, migraine prophylaxis, encourages the appearance of

mycosis in the oral cavity (9). The hyposialia or xerostomia also appears in patients who use drugs such as: anticholinergics agents, antihistamines, diuretics, etc.) (5) (Table 2).

There are known over 400 medications which decrease the quantity of salivary secretion (Table 3).

For these patients, a salivary survey has been suggested, respectively the quantity of saliva, the

**Table 2**  
Factors which decrease the quantity of saliva secretion (modified according to Graham)

Medicines	Antihypertensives
	Anticholinergics
	Antiparkinsonian drugs
	Psychotropic sedatives
	Diuretics
	Marijuana
	Cytostatics
Anxiety	Severe emotional disorder
	Sustained stress
Medical affections	Diabetes
	Malnutrition
	Salivary gland infection, salivary gland obstruction
	Cervical and latero-cervical area irradiation
	Sjögren syndrome
	Surgical intervention at the level of the salivary glands
	Rheumatic affections (connective tissue, collagen, autoimmune system)
	Primary biliary cirrhosis, atrophic gastritis, pancreatic insufficiency, etc
	Dehydration
Physiological status	AIDS, arterial hypertension, cystic fibrosis, neurological affections
	During sleep

**Table 1**  
Salivary flow values – according to Konig

Salivary flow values		
	Repose	Generated (artificial)
Normal	0,3 ml/min	1,5 – 2,5 ml/min
Oligosialia		0,7 ml/min
Xerostomia		0,1 ml/min

**Table 3***Drugs that decrease the quantity of salivary secretion (according to Srebny, 1986)*

<b>Strong side effects on the decrease of the salivary flow</b>	<b>Insignificant side effects on the decrease of the salivary flow</b>
Belladonna alkaloids (Bellergal) Glzyopyrrolat (Robin) Hyoscin (Buscopan) Oxybutynin (Dridase) Pirenzepun (Gastrozepin) Propanthein (Corrigast)	Orphenadrin (Norflex)
Amitriptilin (Euplit) Doxepin (Sinquan) Trimipramin (Stangyl)	Clomipramin (Anafranil), Desipramin (Pertofran), Imipramin (Tofranil), Nortriptylin (Nortrilen), Trancylopropin (Parnate), Trazodon (Thombran)
Chlorprothixen (Taractan) Promazin (Protactyl) Thioridazine (Mellerill)	Haloperidol (Haldol), Fluphenazin (Dapotum +Lyogen), Lithium carbonat (Hypnorex retard), Perphenazin (Decentan), Trifluoperazin (Jatroneural)
	Baclofen (Lioresal), Diazepam (Valium), Orphenadrin (Norflex)
Benzatropin (Cogentinel) Biperiden (Akineton) Tritexyphenidyl (Artane)	Amantadin (Symmetrell), Levodopa (Levodopa), Orphenadrin (Norflex), Procyclidin (Osnervan)
Disopyramid (Norpace)	
	Antazolin (Antistin), Astemizol (Hismanal) Azatadin (Optimine), Brompheniramin (Dimegan) Clemastin (Tavegyl), Cyproheptadin (Periactinol) Dexchlorpheniramin (Polaronil), Diphenhydramin (Benadryl), Hydroxizin (Atarax), Promethazin (Atosil), Trimipramin (Stangyl)
	Diethylpropion (Tenuate), Fenfluramin (ponderax)
	Carbamazepin (Tegretal), Clonazepam (Rivotril) Nitrazepam (Mogadan)
	Alprazolam (Tafil), Bromazepam (Lexotanil) Chlordiazepoxid (Librium) Clormezanon (Muskel Trancopal), Lorazepam (Tavor), Oxazepam (Adumbran) Temazepam (Planum), Triazolam (Halcion)
Clonidin (Catapresan)	Atenolol (Tenormin), Captopril (Lopirin), Guanethidin (Ismelin), Labetolol (trandate), Methyldopa (presinol), Metoprolol
Analgetics, Antibiotics (Tetracycline), Antihistaminics	

salivary pH, bacteriological salivary tests, mycological salivary tests – which could take place inside the dental offices.

For patients with xerostomia it is recommended during antibiotic treatments to receive also antimycotic drugs.

If the salivary pH is low – acid – the fluorine from the dentifrice or from the professional local applications is not efficient. It is well known that the efficiency of the fluorine decreases to a 4,5 pH (the critical pH for fluorapatite).

If we consider, for example, the frequent and extended contacts with acid foods, the fluorine ions don't inhibit enough the demineralization. This is why it is important to motivate the patient in order to control and to avoid the presence of strong acids (4).

Some of the patients with neurological affections who have xerostomia, can suggestively compare, as part of the anamnesis, the dryness of their oral mucosa with the consistency of a sheet of paper. The artificial saliva which is recommended has the disadvantage of an acid pH (it often contains among

electrolytes, citric acid too). Accordingly, the products based on fluorine do not have the anticipated efficiency. In order to counteract the effects of the acid pH, it is recommended to periodically moisten the oral mucosa with still water instead of artificial saliva (when it is possible). For oral hygiene it is recommended to use pharmaceuticals based on chlorhexidina gels, toothpaste with baking soda, which increase the tamponage ability of the saliva. The electric or sonic toothbrush is a good alternative to the normal manual toothbrush, for patients with low adroitness.

- The recall grid (follow-up) inside the dental office is shaped according to the stomatologic status and the salivary survey (salivary flow, salivary pH, bacteriological and mycological tests). We emphasize the need of regularly examinations for candida albicans (for example, the tests available in the stomatologic practice offices).
- Accordingly, we consider imperious the follow-up of the patients suffering from neurological affections no matter the dental status (meaning,

totally edentate or dentate), providing an alternate medication when possible and communicating only with the neurologist.

We consider that it is necessary to individualize dental care for patients with neurological diseases. This individualization concerns both the recommendations for personal oral hygiene and the recall for dental hygienisation in the dental offices. During these sessions, there are several things that need to be taken in consideration: the evaluation of dental status, bacteriological tests, mycological tests, as

well as salivary flow assessment, respectively hyposaliva or xerostomia diagnosis. Other indispensable actions are the professional applications of dental pharmaceuticals which help to prevent dental caries (for dentate patients), as well as finding some individual recommendations for the increase in salivary secretion. We strongly recommend a close communication between the neurologist and the dentist in order to find the best recommendations for the patient in order to increase the life comfort for the patients who suffer from neurological diseases.

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