



AZORG



29 MAART 2025

SPEEKSELPROBLEMEN NA EEN MONDKANKERBEHANDELING

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29-03-2025

Infosessie

SPEEKSELPROBLEMEN NA EEN MONDKANKERBEHANDELING

Door dr. Thomas Aerden

Specialist reconstructieheelkunde van hoofd en hals

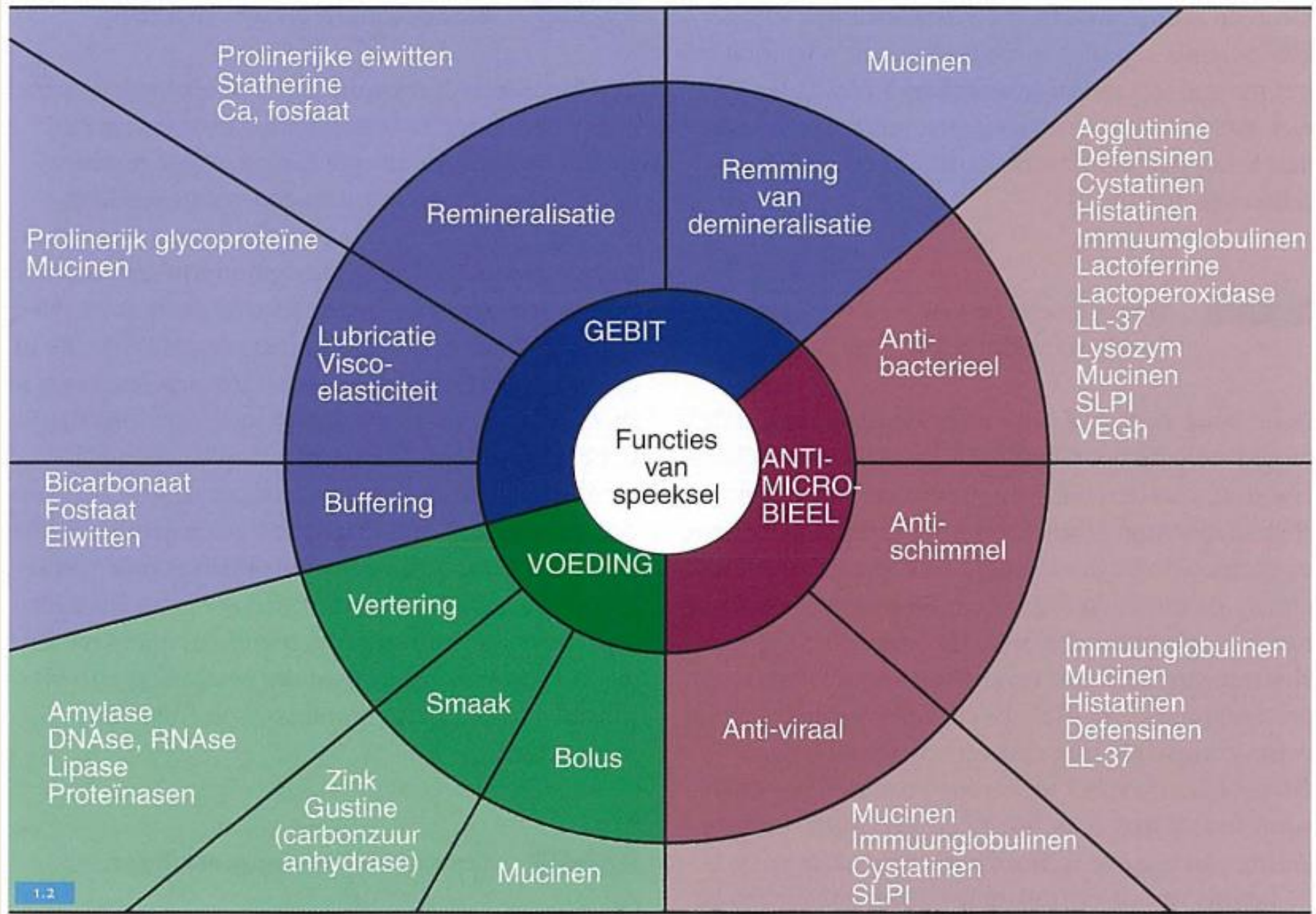
In samenwerking met AZorg Aalst

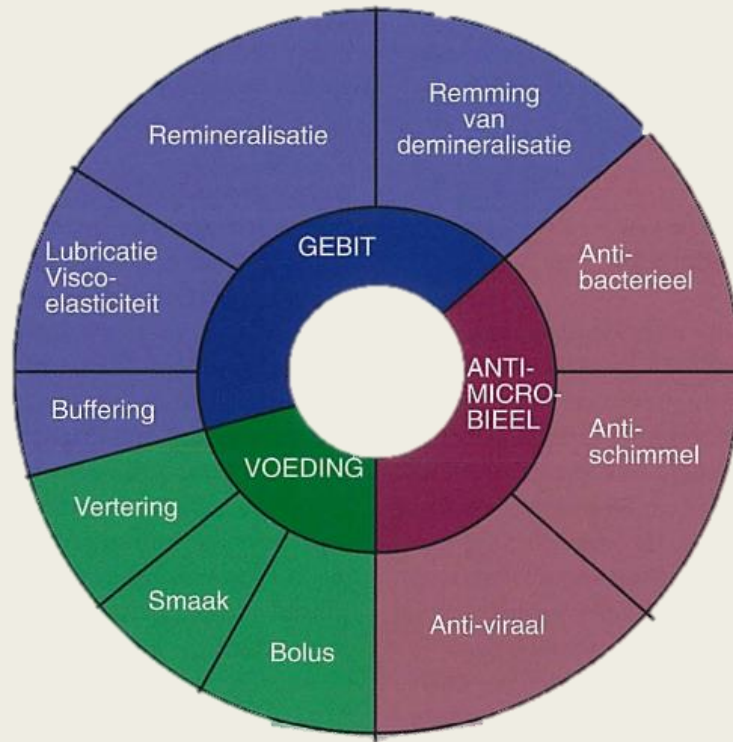


azorg.be

speeksel







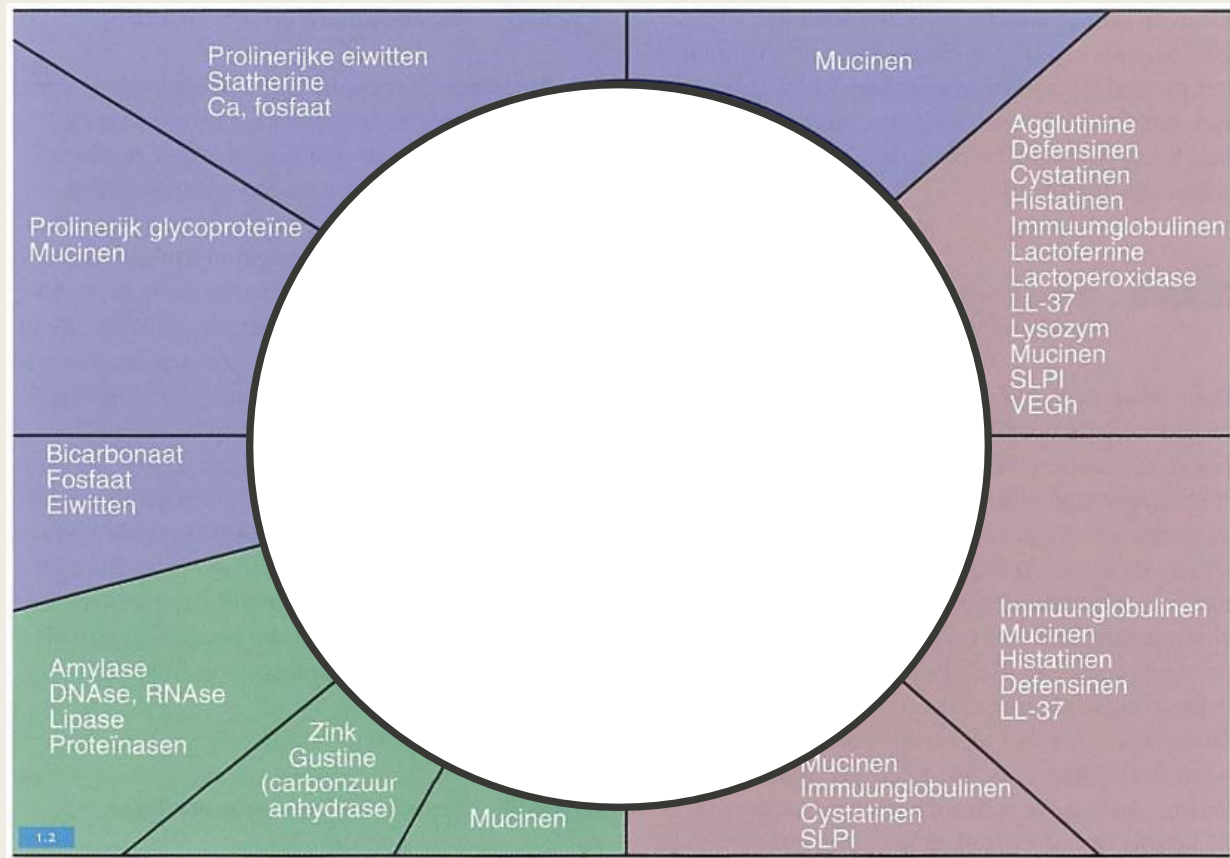
Spraak

Gebitsprothese

Mechanische bescherming

Chemische bescherming

Reiniging



99% water

1% opgeloste stoffen

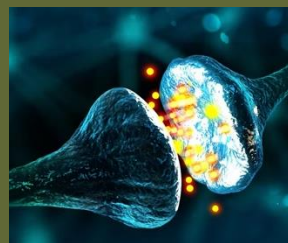
500-1500ml per dag



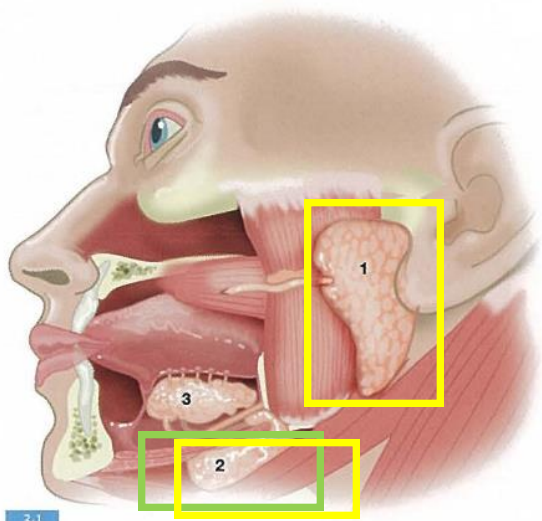
<0.1 – 6ml per minuut



stimulusafhankelijk

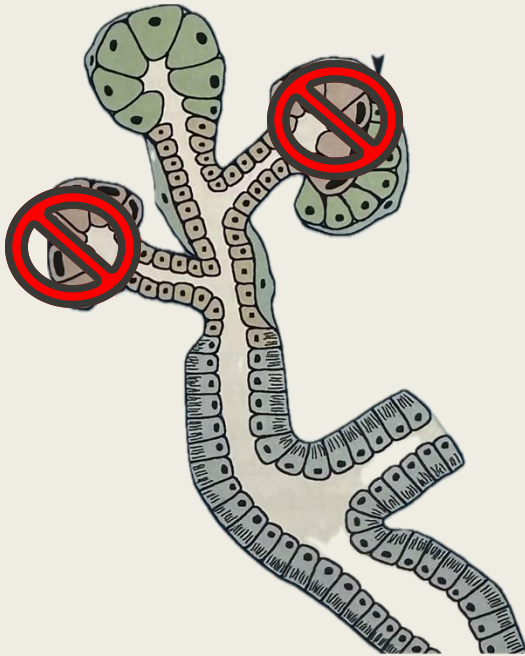


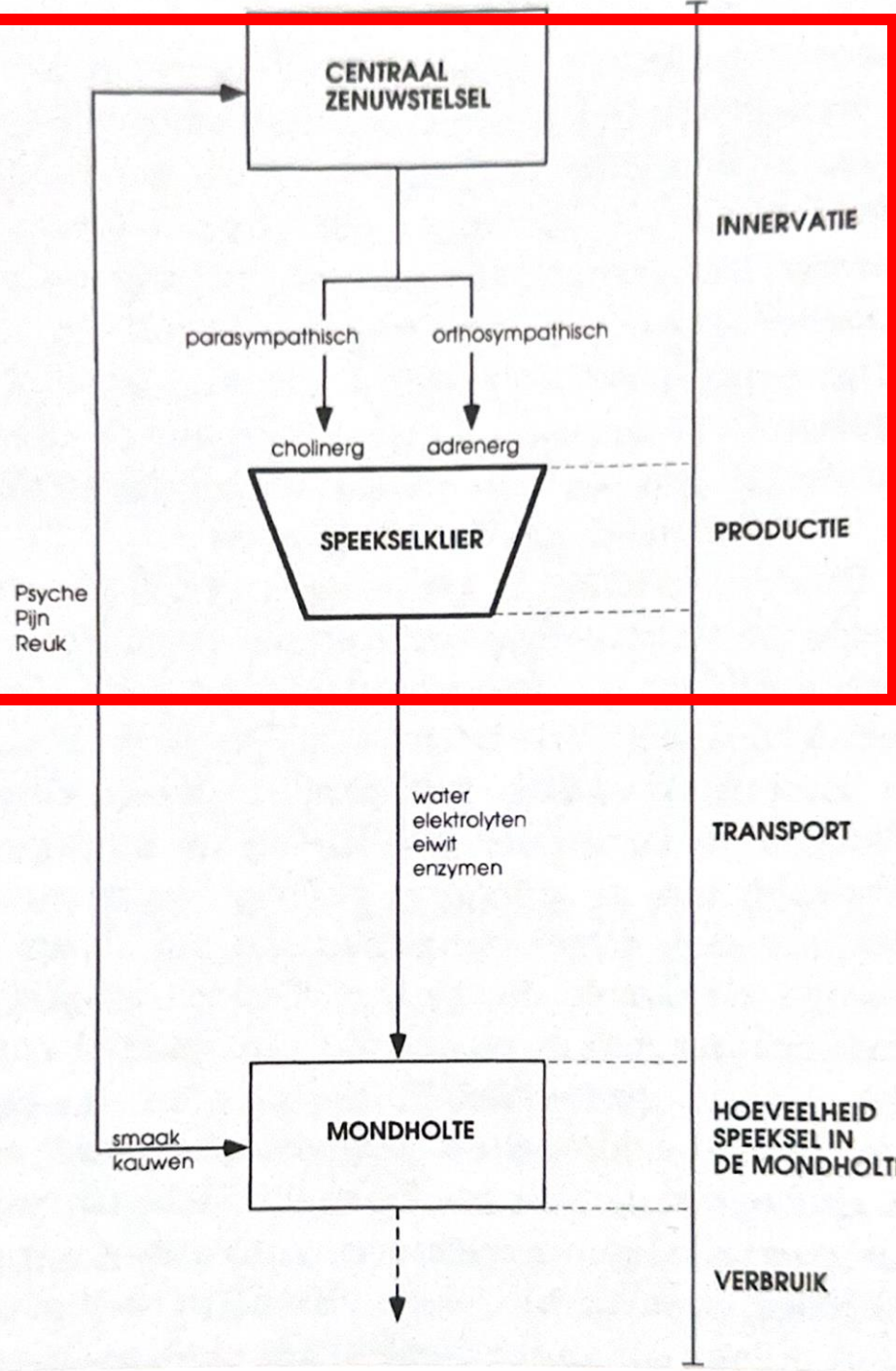
leeftijdsafhankelijk

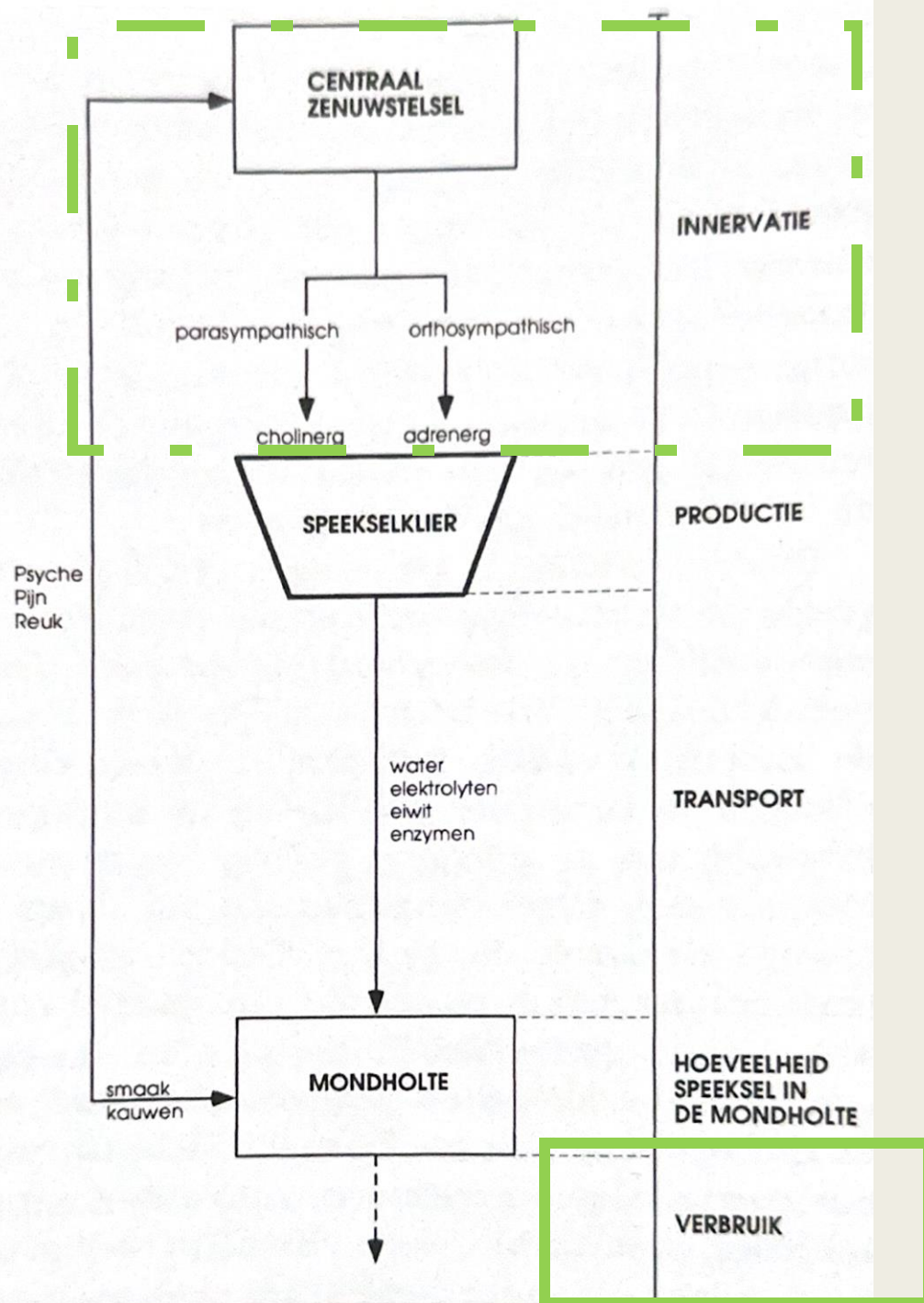


Tabel 4.6 Gemiddelde procentuele bijdragen van de diverse speekselklieren aan het volume van mondvoeistof, onder invloed van stimuli.				
speekselklieren	slaap	ongestimuleerd	mechanisch gestimuleerd	citroenzuur gestimuleerd
parotidea	0	21	58	45
submandibularis	72	70	33	45
sublingualis	14	2	2	2
kleine speekselklierjes*	14	7	7	8

leeftijdsafhankelijk



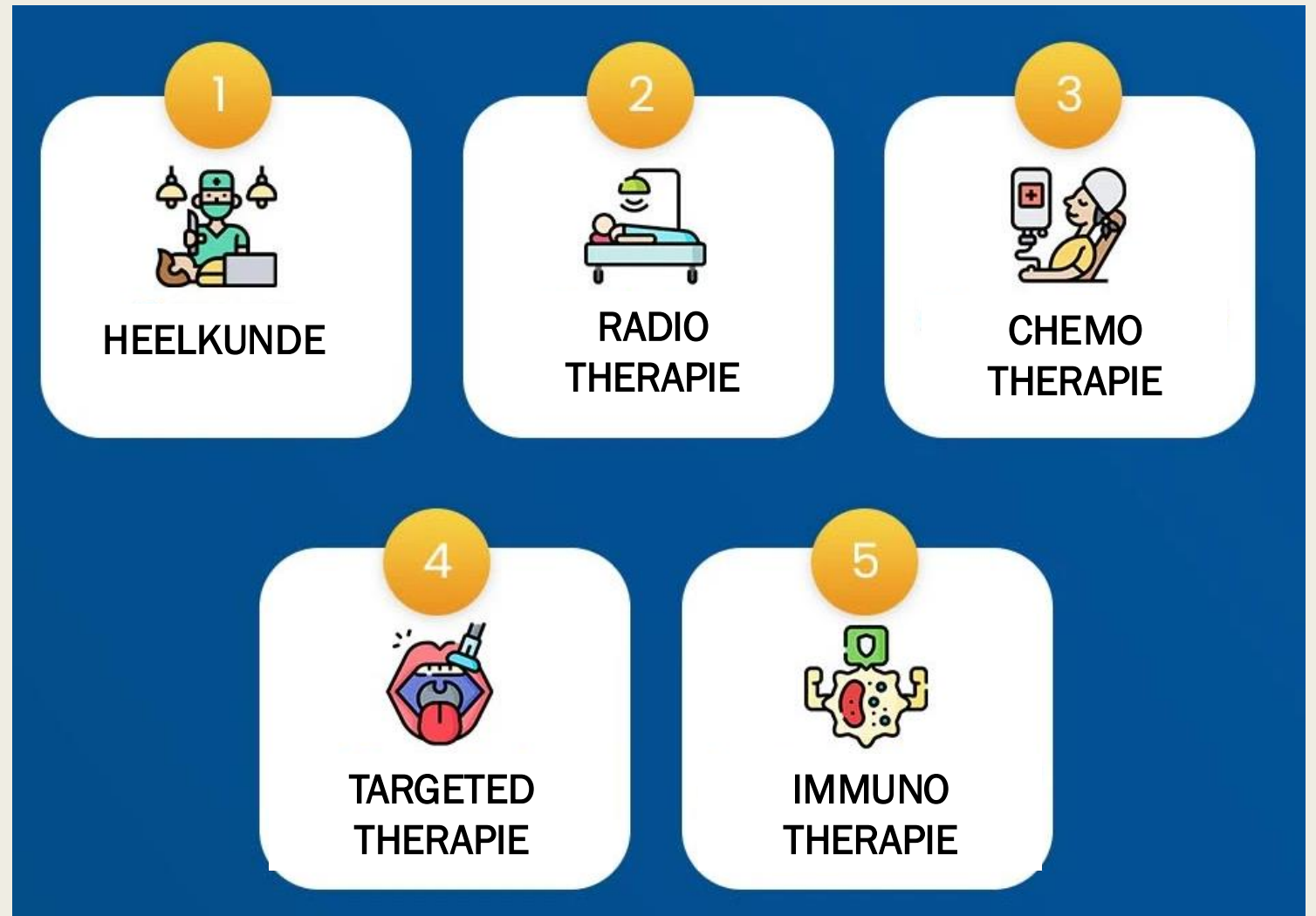




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Behandeling H&H-tumoren

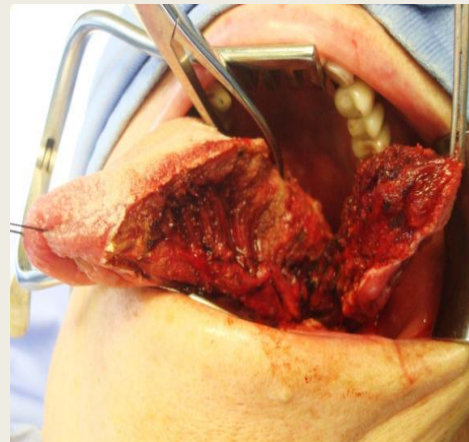
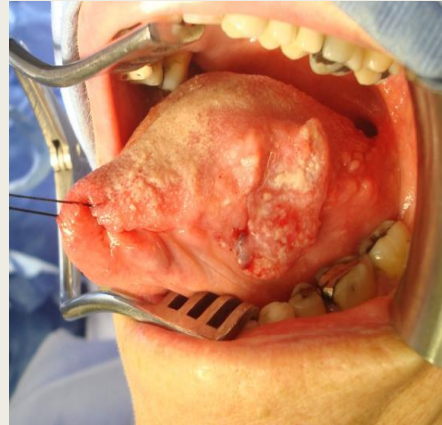




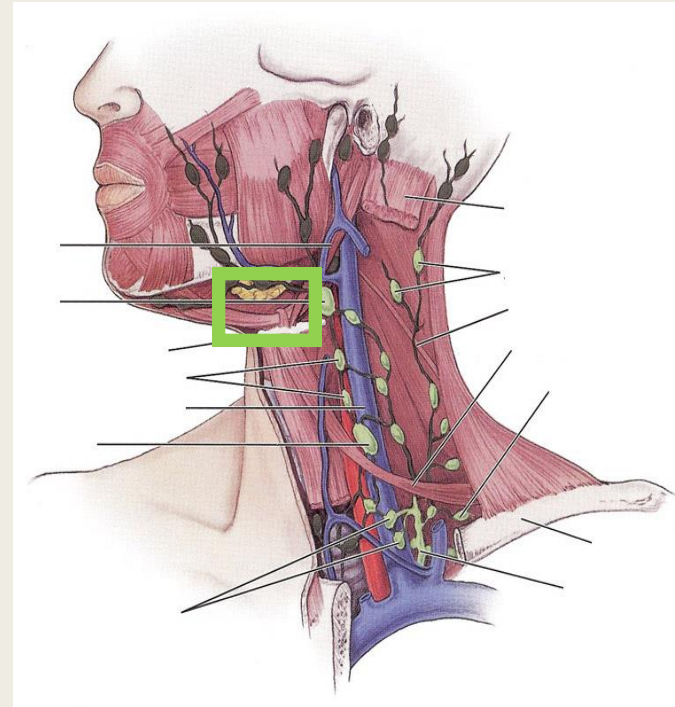


HEELKUNDE

Tumorresectie



halsklierresectie



Reconstructie





HEELKUNDE



Uitval van ...	Niveau rustsecretie
1 oorspeekselklier	90%
2 oorspeekselklieren	80%
1 submandibulaire + 1 sublinguale klier	60%
2 submandibulaire en 2 sublinguale klieren	25%
1 oorspeeksel, 1 submandibulaire en 1 sublinguale klier	50%
2 oorspeeksel, 1 submandibulaire en 1 sublinguale klier	40%
1 oorspeeksel, 2 submandibulaire en 2 sublinguale klieren	15%
Alle grote speekselklieren	<5%



HEELKUNDE



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HEELKUNDE

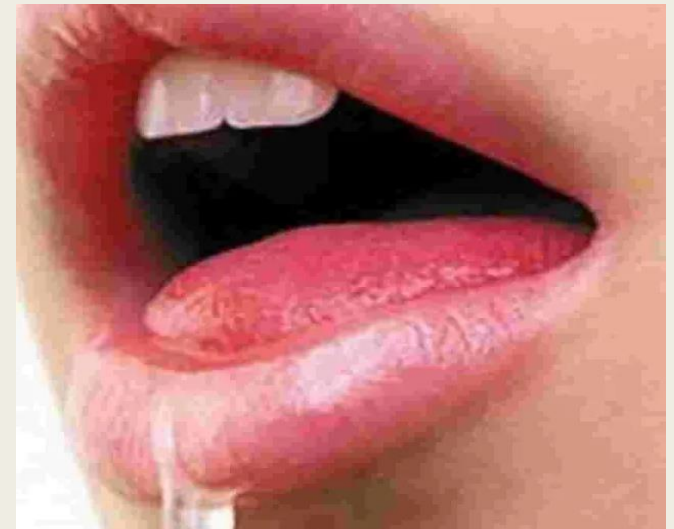


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Alle grote speekselklieren	<5%

Significant zodra verlies van speekselkliervolume >30%

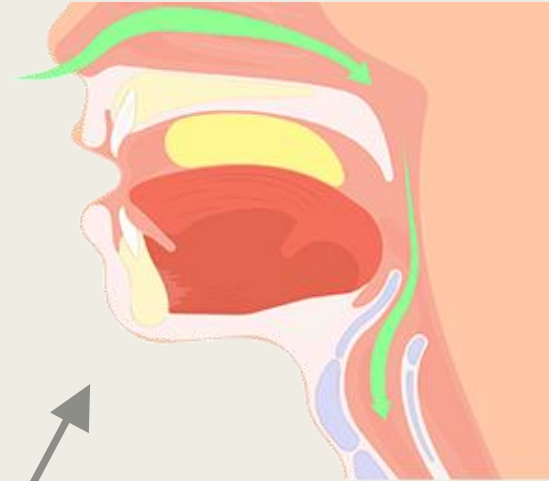


HEELKUNDE





HEELKUNDE





CHEMO THERAPIE

Chemotherapie werk goed op
sneldelede weefsel

MAAR

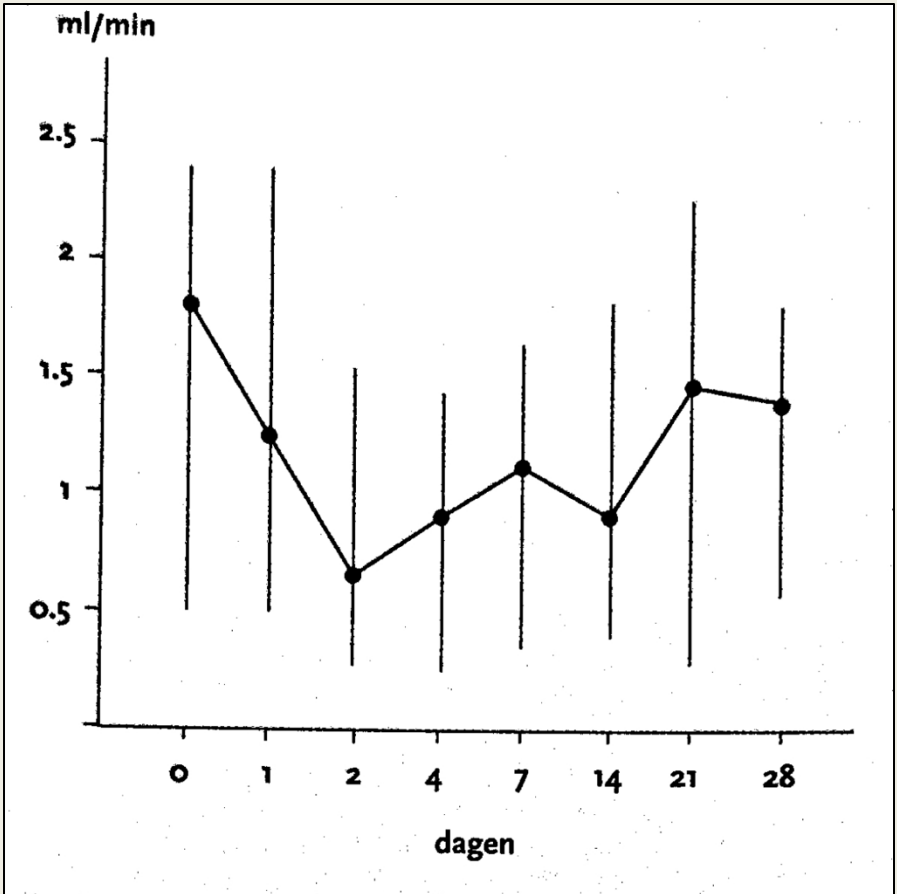
Speekselklieren zijn traagdelend

DUS

Weing invloed op speekselvloed

MAAR

Vaak wel smaakveranderingen





IMMUNO THERAPIE

Monddroogte en orale pijnklachten

Milde vergevoeligheid tot ernstige vermindering van de orale intake

Duidelijke beterend onder cortisonebehandeling, soms discontinuatie nodig

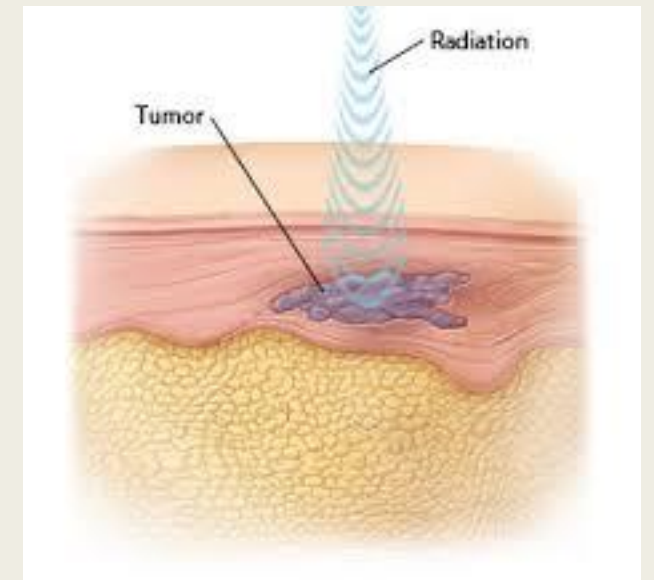
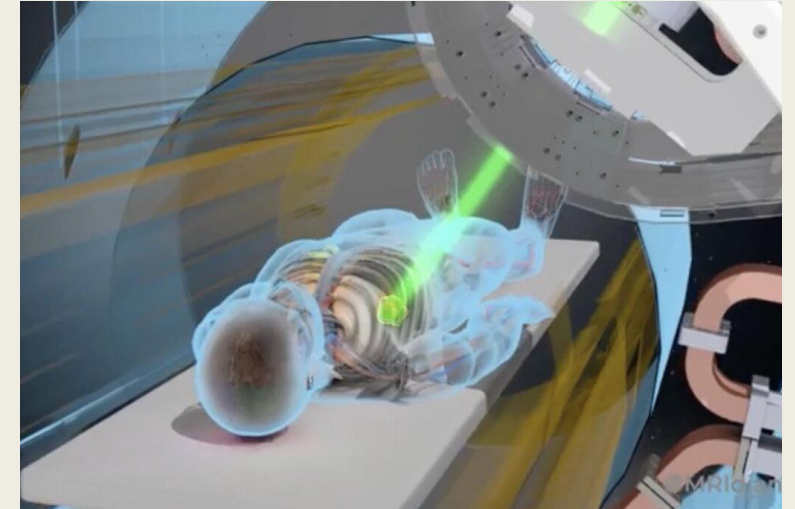
Typisch TIJDELIJK van aard

Hoofd-halskanker >< hematologische maligniteit





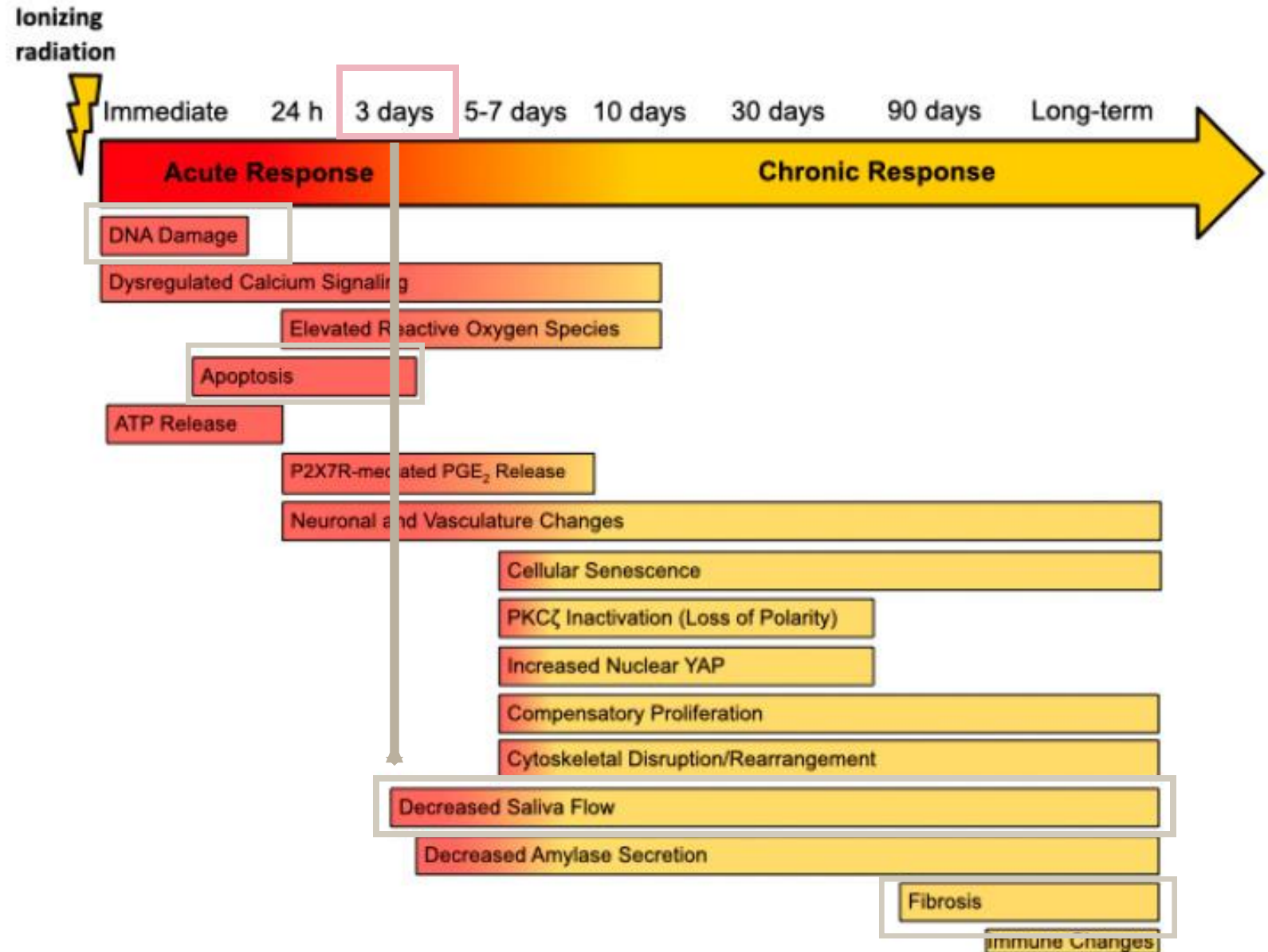
RADIO THERAPIE





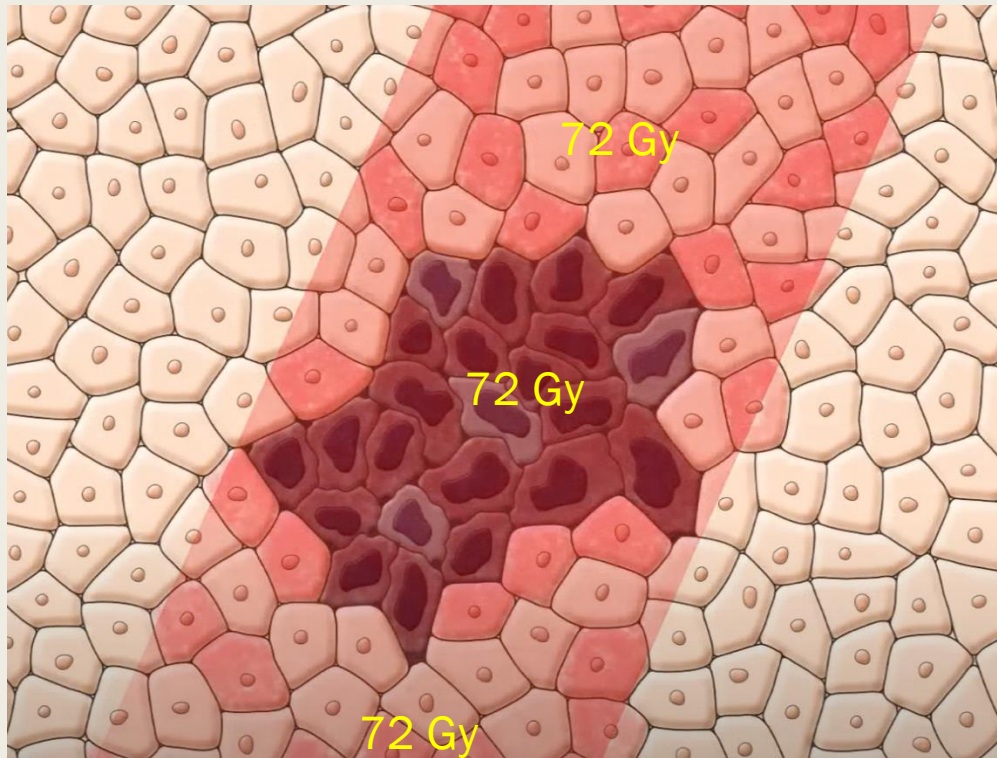


RADIO THERAPIE

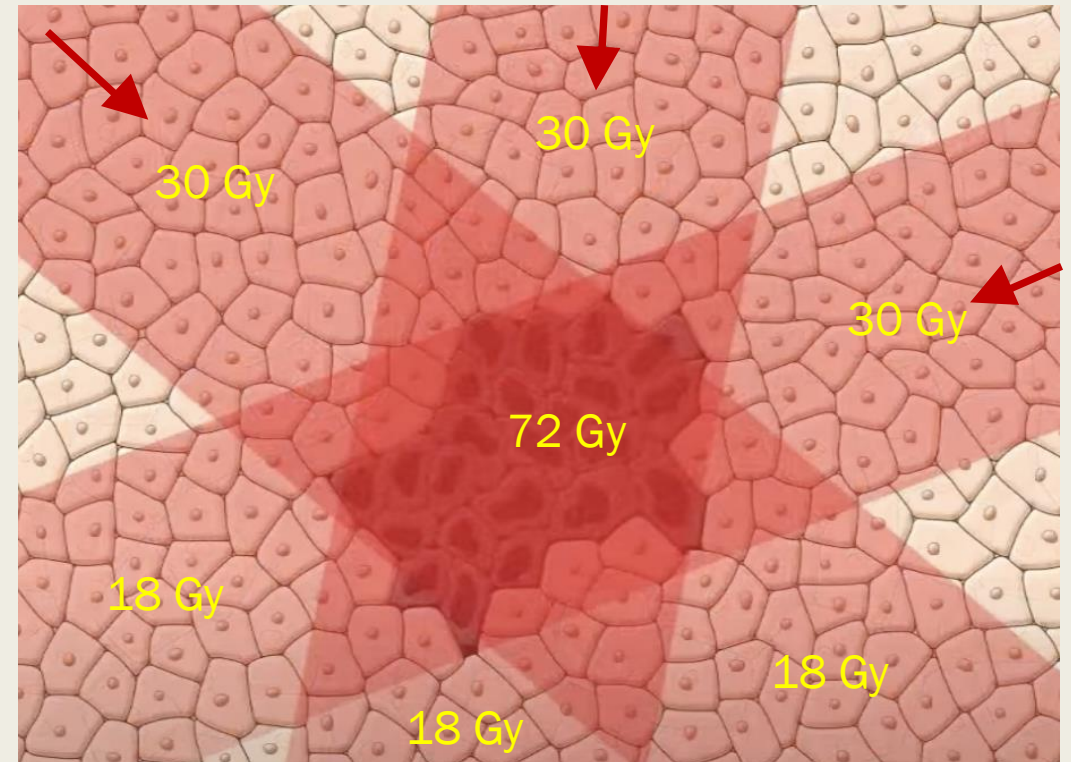




RADIO THERAPIE



Enkelvoudige straalinval van
hoge intensiteit

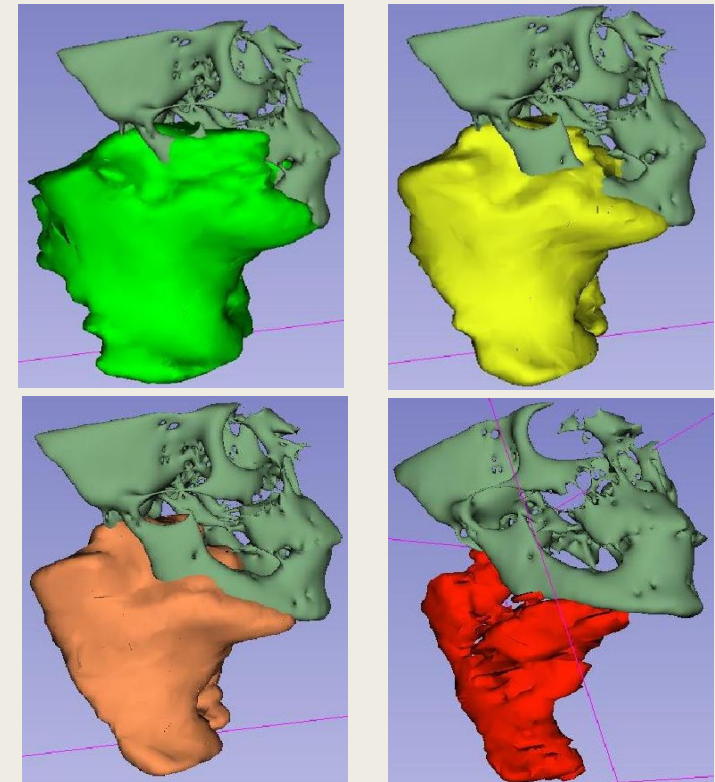
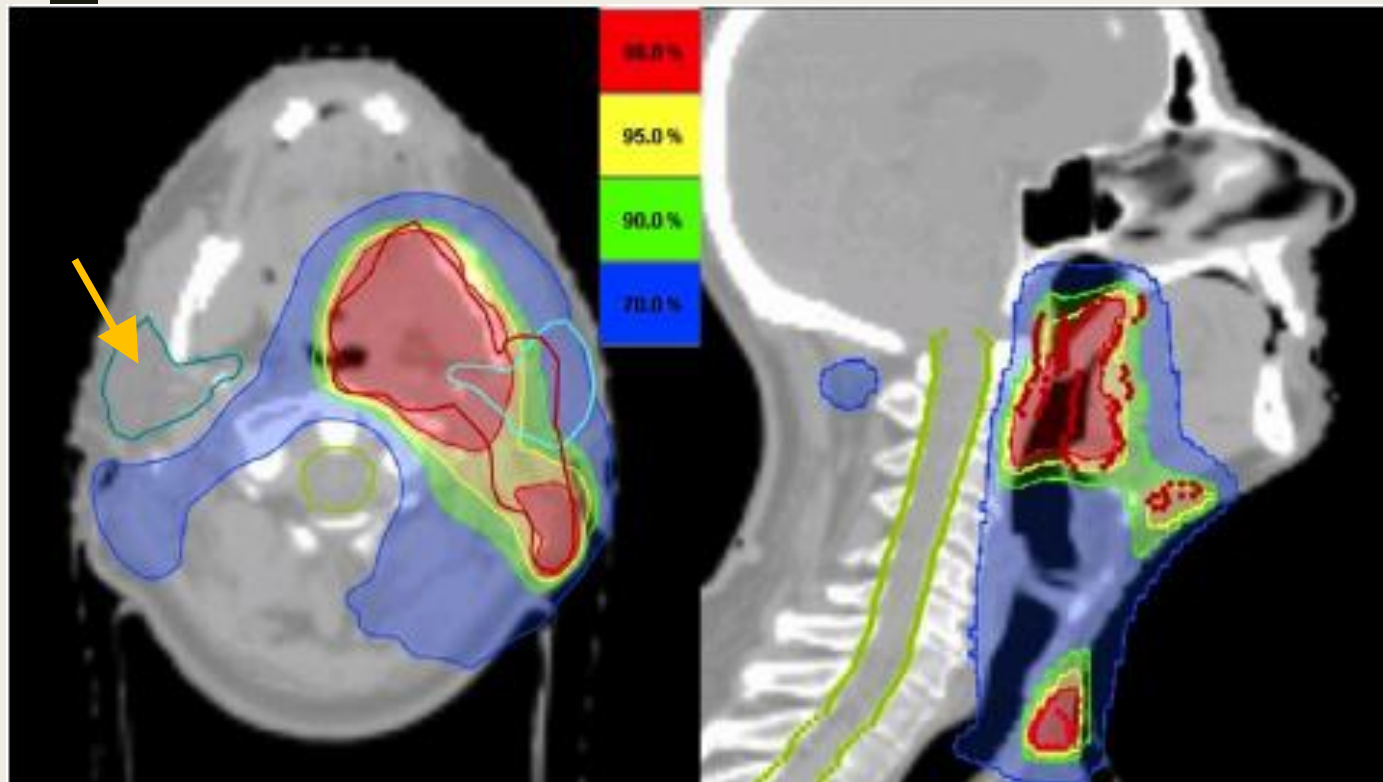


Multiple stralen van lagere
intensiteit = weefselsparend



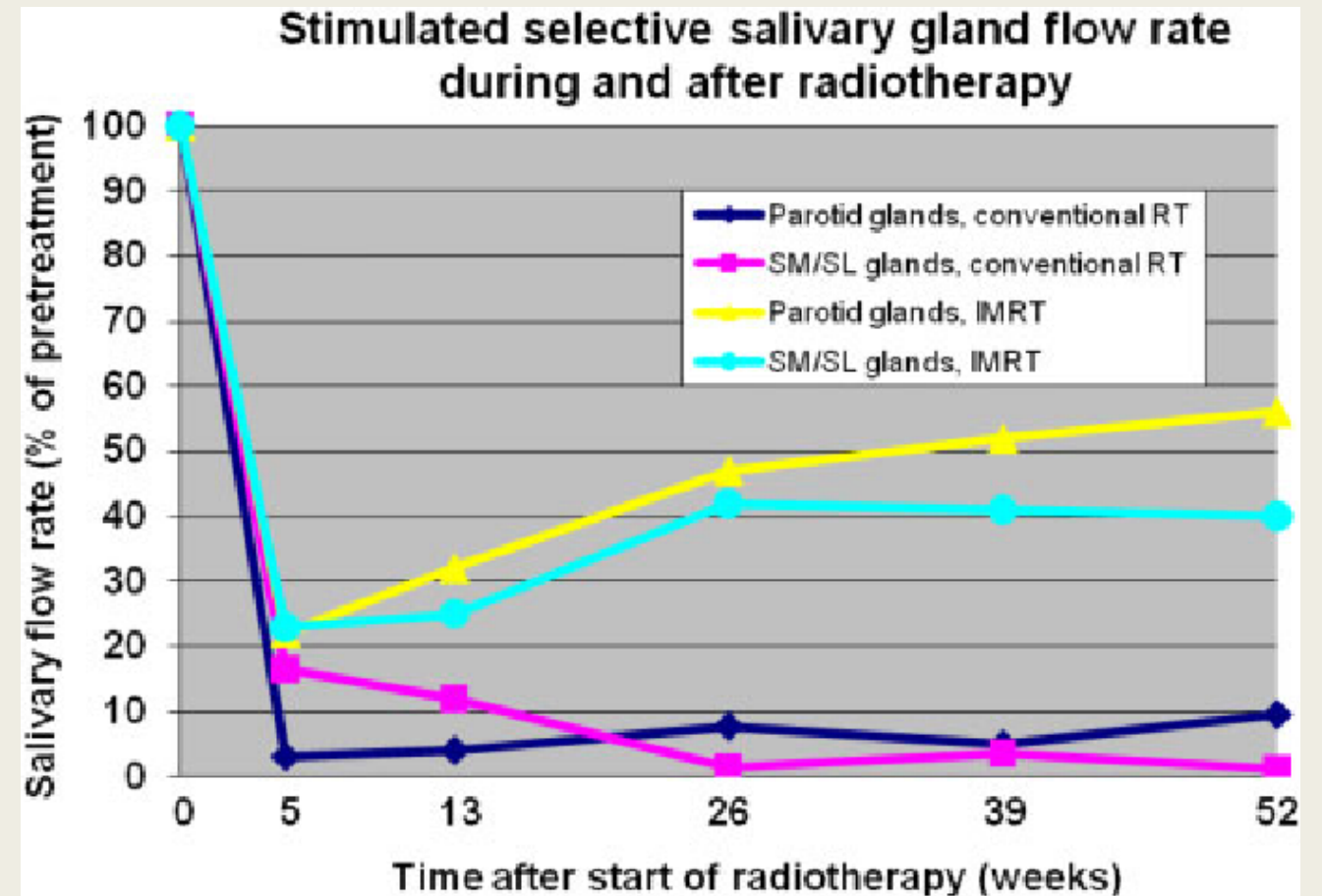
RADIO
THERAPIE

Intensiteits gemoduleerde radiotherapie (IMRT)





RADIO THERAPIE





RADIO THERAPIE

Reeds na 10 Gy bestraling
(= 1^e week)
→ daling van de speekselsecretie

Reeds na 25 Gy bestraling
(= begin 3^e week)
→ irreversibele daling
speekselsecretie parotis
→ Te weinig speeksel bij stimulatie

Reeds na 40 Gy bestraling (= 4^e
week)
→ irreversibele daling
speekselsecretie overige bestraalde
speekselklieren
→ Droge mond in rust

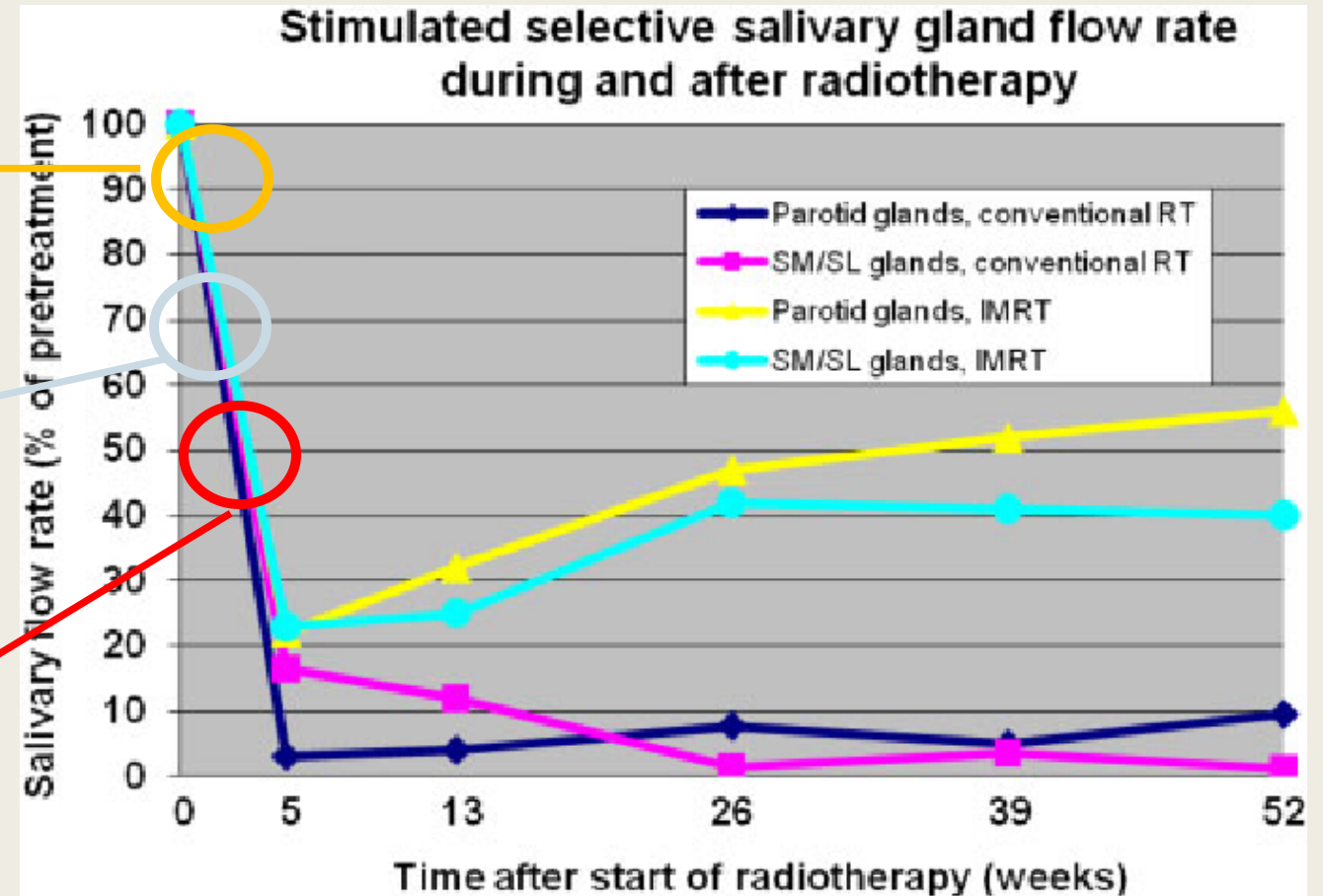


Table 1. Management guidelines to reduce radiation-induced xerostomia and their level of evidence*

Treatment approach	Guideline	Level of evidence, grade of recommendation†
Radical scavenger Amifostine (8, 66)	Phase III trials have shown that amifostine might reduce xerostomia after radiotherapy. However, no guidelines are possible because of lack of consensus on interpretation of existing evidence. Most studies did not have the statistical power to evaluate the influence of amifostine on the therapeutic index. Also, the trial design of most studies was at least questionable and the outcomes subject to debate. The majority of the trials lacked a placebo in the control arms.	Level II, grade C
Muscarinic agonist stimulation During radiotherapy (8)	Use of pilocarpine cannot be recommended for improvement of xerostomia because the results of the randomized clinical trials were not univocal. Moreover, improvement of salivary gland hypofunction was limited. The dissimilar results on sparing of the salivary gland function are probably a result of the wide range of cumulative doses applied. The only trial providing an analysis of sparing of parotid gland function related to mean parotid dose indicated significant sparing of parotid gland function and reduced xerostomia for mean parotid doses exceeding 40 Gy (40).	Level II, grade C
After radiotherapy (8, 11, 67)	The use of pilocarpine after radiotherapy can be recommended for improvement of xerostomia.	Level II, grade B
Mucosal lubricants and saliva substitutes (8, 68)	The use of oral mucosal lubricants and saliva substitutes for short-term improvement of xerostomia after radiotherapy can be recommended.	Level II, grade B
Gustatory and masticatory stimulation (8, 68)	No guideline possible because of little evidence on which to base a guideline for patients suffering from xerostomia induced by radiotherapy.	Level III, grade D
Surgical transfer of submandibular gland (8, 69)	The obtained level of gland sparing might be of clinical significance.	Level IV, grade B
Acupuncture (8, 70)	The use of acupuncture to stimulate salivary gland secretion and to alleviate xerostomia can be suggested to the patient.	Level II, grade C

Wat ervaart de patiënt?



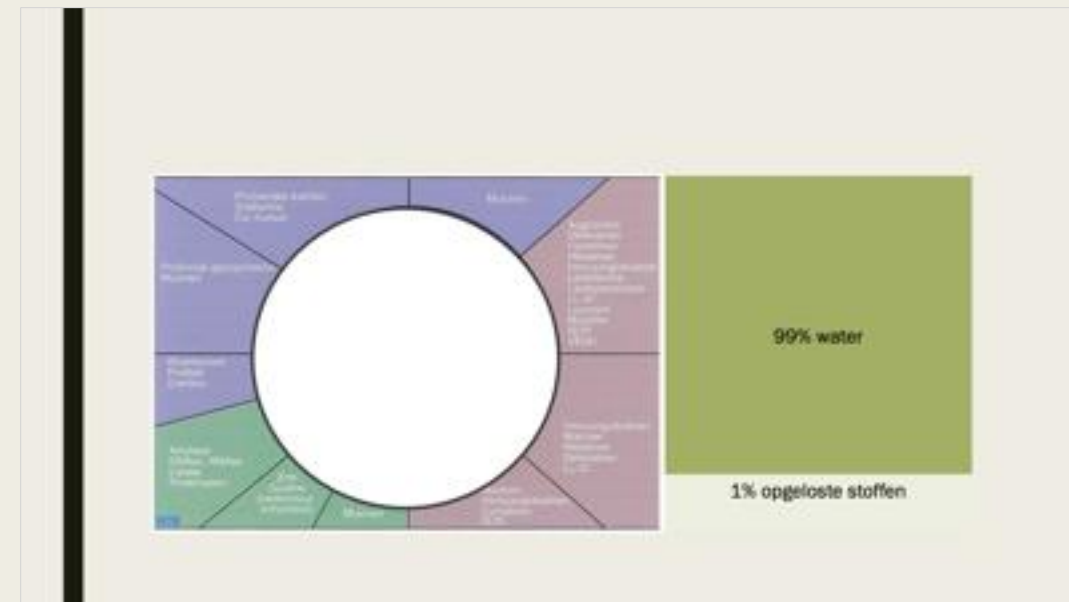


ξηρός στόμα

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hyposalivatie

6% totale bevolking / 25% 50+'ers / tot 93% van de H&H patienten

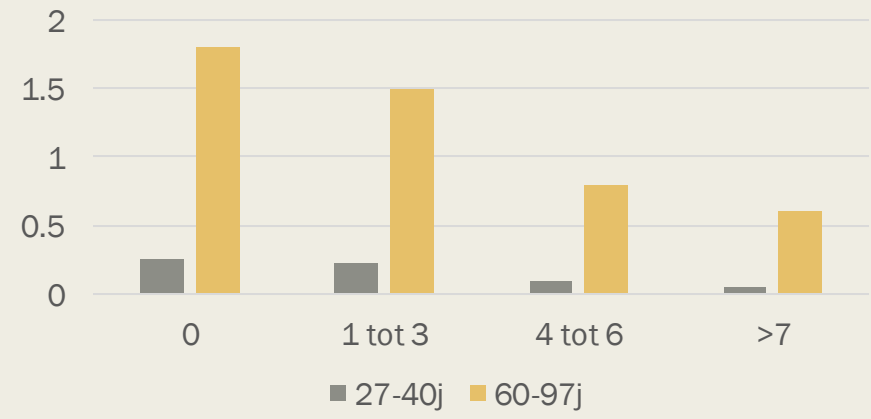


Elektrolieten, zuurtegraad, proteïne-inhoud





Relatie tussen aantal medicamenten en secretiesnelheid van het speeksel



Welke medicatie geeft monddroogte?

- Alfablokkers, in het bijzonder de selectieve alfa-1-blokkers (medicamenten bij prostaatklahten)
- Allergeenextracten
- Antiaritmica
- Antibiotica: aminoglycosiden, antibacteriële medicamenten (overige), carba-penems, cefalosporinen, fluorochinolonen, macroliden, oxazolidinonen, penicillinen, tetracyclinen
- Antidepressiva: selectieve serotonineheropnameremmers (SSRI), tricyclische antidepressiva (TCA), MAO-A-remmers, MAO-B-remmers
- Antidiabetica: DPP4-remmers, GLP-1-agonisten, SGLT2-remmers
- Anti-emetica
- Anti-epileptica
- Antiglaucommedicamenten: NSAIDs (oculair), prostaglandine f-analoga, koolzuuranhydrase(II)-remmers, bètablokkers (oculair), parasymphathicolytica (oculair), symphathicomimetica (oculair)
- Antihistaminica
- Antihypertensiva: diuretica, bètablokkers, calciumantagonisten (overige), ACE-remmers, angiotensinereceptorblokkers, alfablokkers, antihypertensiva (centraal aangrijpend), lisdiuretica, renineremmers
- Antimycotica: antimycotica (overige), echinocandinen, imidazolen
- Anti-Parkinsonmedicatie: amantadine (groep), COMT-remmers, dopamine-agonisten, levodopa met decarboxylaseremmers, MAO-B-remmers, tertiaire aminen
- Antipsychotica: antipsychotica (atypische), antipsychotica (klassieke), dopamine-antagonisten, lithiumzouten
- Antitrombotica: anticoagulantia (direct werkende), glycoproteïne IIb/IIIa-receptorantagonisten, prostacycline-analoga, salicylaten
- Antivirale medicamenten: antivirale medicamenten bij hepatitis (overige), fosfonzuurderivaten, HCV-polymeraseremmers, HIV-integraseremmers, HIV-nucleoside reverse-transcriptaseremmers, HIV-nucleoside reverse-transcriptaseremmers, HIV-proteaseremmers, nucleoside- en nucleotide-analoga, NS5A-remmers
- Anxiolytica: benzodiazepine-agonisten, psychofarmaca (overige)
- Bèta2-symphathicomimetica
- Bisfosfonaten
- Coxibs
- Fosfodiësterase-5-remmers
- H₂-receptorantagonisten
- Immunosuppressiva: calciumneurineremmers, immunosuppressiva (overige), MS-medicamenten, TNF-alfa-blokkers
- Medicamenten bij alcohol-, nicotine- en opioïdverslaving
- Oncolytica: alkylerende medicamenten, anti-androgenen, antracyclinederivaten, aromataseremmers, gonadoreline-agonisten, interferonen, monoclonale antilichamen bij maligniteiten, oncolytica (overige), progestagenen (exclusief

30%

placebo-effect

Welke medicatie geeft monddroogte?



Adrenaline-effect – “fight-flight reactie”

- Neussprays – decongestiva
- Puffers – bronchodilatatoren
- Amfetamines (rilatine)
- Eetlustremmers

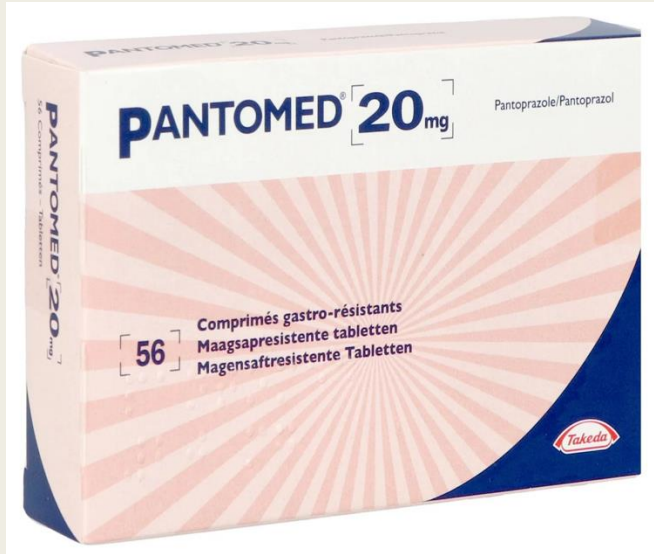
Welke medicatie geeft monddroogte?



anticholinerg-effect

- atropine
- Tricyclische antidepressiva
- SSRI / SNRI
- Antihistaminica
- Anti-emetica
- antipsychotica
- Oxybutinine – overactieve blaas

Welke medicatie geeft monddroogte?

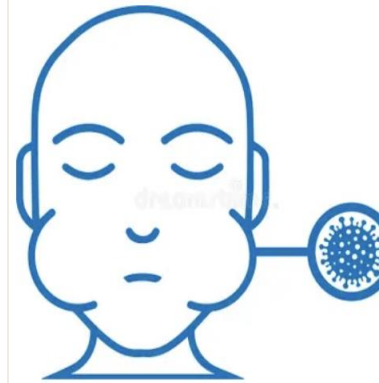
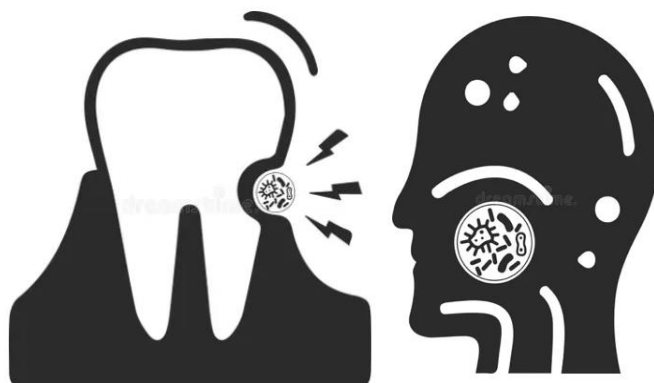
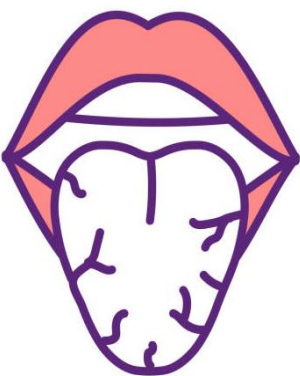


andere medicatie

- Lithium
- Omeprazole - maagzuurremmer
- Diuretica
- Disopyramide – anti-aritmica
- Didanosine – HIV-remmer
- Benzodiazepines – slaapmedicatie

Table 2 Clinical grading of xerostomia, based on the common terminology criteria for adverse events (CTCAE)

Grading	Clinical implication	Unstimulated saliva flow
Grade 1 (mild)	Symptomatic, without significant dietary changes	≥ 0.2 mL/min
Grade 2 (moderate)	Symptomatic, with significant dietary changes (Large intake of water or use of other lubricants, or diet limited to soft food)	0.1–0.2 mL/min
Grade 3 (severe)	Symptomatic, with oral feeding inability—requiring enteral or parenteral nutrition	<0.1 mL/min
Grade 4 (life-threatening)	–	–
Grade 5 (fatal)	–	–





Muscarinic agonists

MoA: Salivary stimulation
MCT: Muscarinic receptors (M3)
Example: Pilocarpine, Cevimeline
Safety: Local side effects possible
AEs: Sweating, flushing, GI distress
Rec: Recommended - primary choice

Antineoplastic detoxifying agents

MoA: Cytoprotection, DNA repair
MCT: ALP, ROS
Example: Amifostine
Safety: Well-tolerated
AEs: Hypotension, GI distress, N/V
Rec: Effective, DD

Corticosteroids

MoA: Anti-inflammation
MCT: Phospholipase A2
Example: Prednisone, Dexamethasone
Safety: Systemic side effects possible
AEs: Immunosuppression, osteoporosis
Rec: Not recommended generally

Superoxide dismutase mimetics

MoA: Cytoprotection
MCT: ROS
Example: Avasopasem Manganese
Safety: Well-tolerated
AEs: Limited evidence
Rec: Limited evidence

Bile secretion-stimulating agent

MoA: Salivary stimulation
MCT: Cholinergic pathway
Example: Anethole trithione
Safety: Well-tolerated
AEs: GI distress, N/V
Rec: Effective, DD

Mesenchymal stem cells therapy

MoA: Tissue repair/regeneration
MCT: Epithelial cells and immune system
Example: Autologous MSCs
Safety: Potential for immune reactions
AEs: Limited evidence
Rec: Limited evidence

Intensity-modulated radiation therapy

MoA: Reduced cell damage
MCT: –
Example: –
Safety: Same as conventional RT
AEs: Common RT side effects
Rec: Recommended, DD

Adaptive radiation therapy

MoA: Reduced cell damage
MCT: –
Example: –
Safety: Same as conventional RT
AEs: Common RT side effects
Rec: Recommended, DD

Salivary substitutes

MoA: Replace reduced saliva
MCT: –
Example: Artificial saliva, HMC, Glycerin
Safety: Well-tolerated
AEs: Low risk of oral irritation
Rec: Effective for temporarily relief

Therapeutic options for cancer treatment-related xerostomia

Saliva stimulants

MoA: Salivary stimulation
MCT: Salivary gland receptors
Example: Xylitol/sorbitol gums
Safety: Well-tolerated
AEs: Low risk of oral irritation
Rec: Effective for temporarily relief

Salivary gland transfer

MoA: Replacement of dysfunctional glands
MCT: –
Example: Submandibular SGT
Safety: Risk of surgical complications
AEs: Surgical complications, recurrence
Rec: Limited evidence, DD

Stem cell transplantation

MoA: Replacement of damaged glands
MCT: Epithelial regeneration pathways
Example: Autologous SGSCs
Safety: Risk of surgical complications
AEs: Surgical and immune complications
Rec: Limited evidence

Botulinum toxin injection

MoA: Salivary gland activity modification
MCT: NMJ, neurotransmitter release
Example: –
Safety: Potential for side effects
AEs: Dysphagia, xerostomia worsening
Rec: Not recommended generally

Nutritional interventions

MoA: Stimulation, anti-inflammation
MCT: –
Example: Omega-3, vitamin, herbal extract
Safety: Well-tolerated
AEs: Potential for medication interactions
Rec: Limited evidence, DD

Photobiomodulation

MoA: Anti-inflammation
MCT: Mitochondrial function, CSP
Example: LLLT
Safety: Well-tolerated
AEs: Mild transient discomfort
Rec: Not recommended generally

Hyperbaric oxygen therapy

MoA: Increased tissue oxygenation
MCT: NO pathway
Example: –
Safety: Well-tolerated
AEs: Barotrauma, oxygen toxicity
Rec: Not recommended generally

Transcutaneous electrical nerve stimulation

MoA: Nerve function stimulation
MCT: Sensory pathways, NT release
Example: TENS, ALTENS
Safety: Well-tolerated
AEs: Skin irritation, discomfort
Rec: Not recommended generally

Acupuncture

MoA: Nerve function stimulation
MCT: –
Example: –
Safety: Well-tolerated
AEs: Pain, bruising
Rec: Not recommended generally

causaal

Deshydratatie

Angst / Depressie

Polyfarmacie

Mondhygiëne

Ziekte van Sjögren

(Amifostine
cortisone
Anethiol tritione...)

stimulatie

Smaak

&

Medicatie

substitutie

water

&

kunstspeeksel

causaal

Deshydratatie

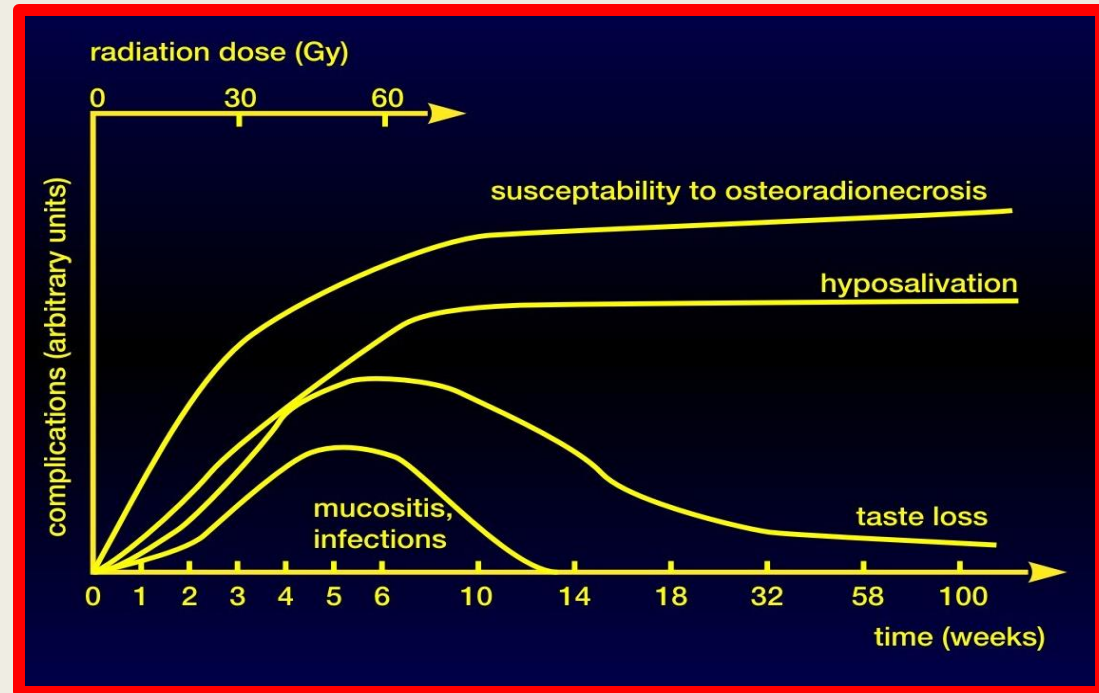
Angst / Depressie

Polyfarmacie

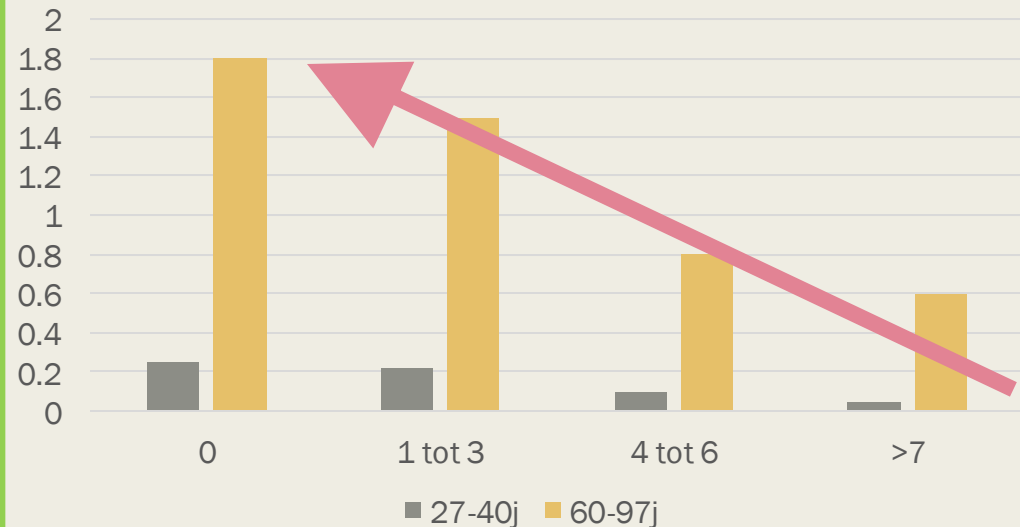
Mondhygiëne

Ziekte van Sjögren

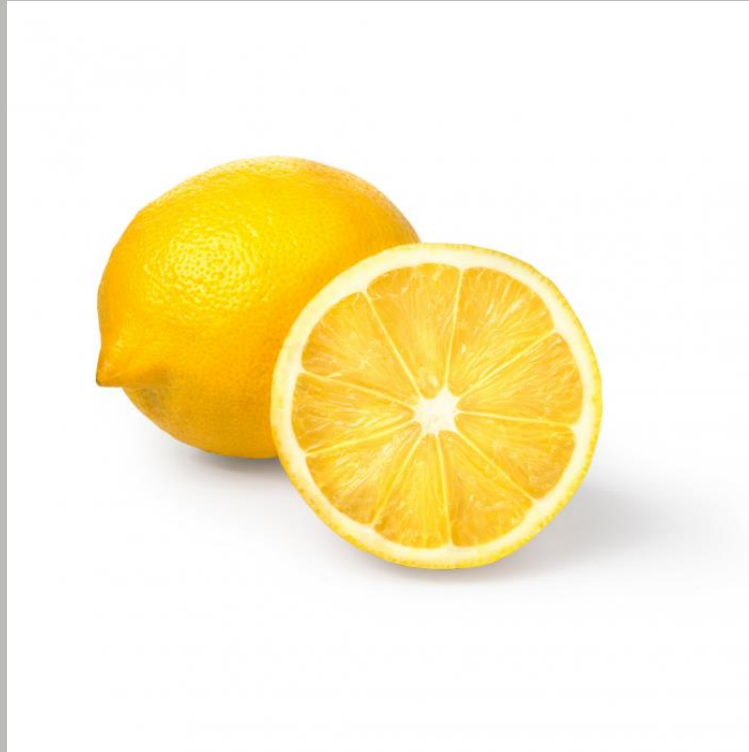
(Amifostine
cortisone
Anethiol tritione...)



Relatie tussen aantal medicamenten
en secretiesnelheid van het speeksel



stimulatie



substitutie

water

&

kunstspeeksel

stimulatie

Smaak

&

Medicatie

<i>stimulus</i>	<i>effect</i>	<i>voordeel</i>	<i>nadeel</i>
<i>mechanisch</i>			
kauwgom	dun-waterig speeksel	meer volume; milde smaken	voornamelijk dentaten, bij edentaten kleeft de kauwgom vaak aan de prothese; te sterke smaken
zuigtabletten	lange gebruikstijd	milde smaak	schuimig speeksel
<i>smaak</i>			
menthol	muceus speeksel	stimuleert alle speekselklieren	te sterke smaak
zoet	muceus speeksel	goedkoop	cariogeen, suiker
zuur	waterig speeksel	groot volume	erosief
vitamine C	chemische reductie; dun speeksel	reduceert viscositeit	erosief



stimulatie

Smaak

&

Medicatie

Sialagogen

- **pilocarpine**
- **cevimeline**
- **betanecol chloride**
- **anethole-trithione (sulfarlem)**
- **bromhexine**

- **neostigmine**
- **yohimbine**
- **KCl**
- **nicotinic acid**
- **malic acid**
- **vitamin A**

stimulatie

Smaak

&

Medicatie

R/ pilocarpine HCl 5 mg
S/ 2-4x/d 1 capsule



Cevimeline

Lactoperoxidase en lysozyme

Biotène Oral Balance
BioXtra

Carboxymethylcellulose

Glandosane
Saliveze
MAS 84
Rinse solution
Saliment aerosol
Salisynt aerosol

Mucine

Saliva orthana
Saliva Medic Spray

Xanthaangom/aloë vera of lijnzaad extract

Xialine: xanthaangom,
fluoride en sorbitol
Aldiamed Gel: aloë vera,
lactoferrine en lysozyme

Koolzaadolie
Salinum: lijnzaadextract

Elektrolytsamenstelling vergelijkbaar met speeksel

Oralube

substitutie

water

&

kunstspeeksel

substitutie

water

&

kunstspeeksel

Speekselsubstituten

Ad libitum gebruik
Reële verwachtingen
Gel, spray, applicator, zuigtablet, etc.

Advies

Overdag: Mucine (Saliva orthana)
Xanthaangom (Xialine)

spray bij acute nood (Gum hydral)

Nacht: bevochtiging (Oral Balance)



Effectiviteit van speekselsubstituten ter verlichting van monddroogte

December 2014

DOI: [10.1007/978-90-368-0689-3_1](https://doi.org/10.1007/978-90-368-0689-3_1)

In book: Het tandheelkundig jaar 2015

 Casper P Bots · R. Ouzzine ·  H. Brand

	ooit gebruikt	huidig gebruik	percentage non-use
mondspray			
Biotène	39%	14%	64%
BioXtra	6%	3%	50%
Dentaid Xeros	11%	3%	75%
Hypozaalix	1%	1%	0%
Dental	1%	0%	100%
Saliva Orthana	7%	0%	100%
Xialine	3%	1%	50%
onbekend	6%	0%	100%
mondgels			
Biotène	60%	24%	60%
BioXtra	11%	6%	50%
Dentaid Xeros	3%	1%	50%
GC Dry Mouth	3%	1%	50%
onbekend	6%	0%	100%
mondspoeling			
Biotène	15%	6%	64%
BioXtra	3%	3%	0%
Dentaid Xeros	6%	4%	25%
Wellela	1%	1%	0%

Ineffectief en slechte smaak!

substitutie

water

&

kunstspeeksel

andere?

Acupunctuur

Nutriceuticals (vit E, C, omega 3)

Fotobiomodulatie (LLLT)

Hyperbare zuurstoftherapie

Subjectieve verbetering

Geen overtuigende wetenschappelijke ondersteuning

Vermijd alcohol, cafeïne en tabak

Table 4 Active and ongoing trials for management of cancer treatment-related xerostomia

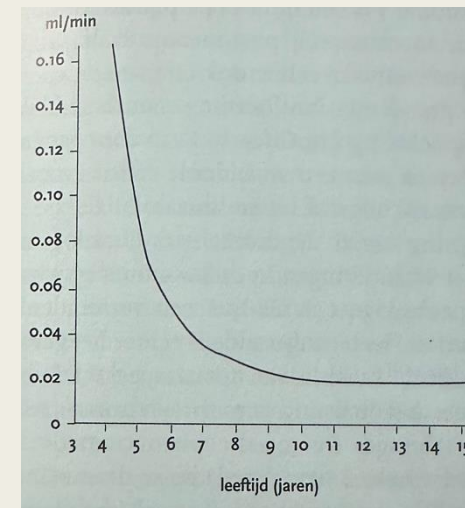
Country	Study design	Study population	Intervention(s)	Source ID (clinicaltrials.gov)
USA	Randomized, multicenter, double-blinded, controlled trial	Adults with radiation-induced late xerostomia	AAV2-hAQP1 Gene therapy	NCT05926765
USA	Dose-escalation phase I trial	Post-radiation adults with head and neck cancer	AAV2-hAQP1 Gene therapy	NCT02446249
Denmark	Randomized, single-center, double-blinded, controlled trial (phase II)	Post-radiation adults with head and neck cancer	Mesenchymal stem cells	NCT04776538
Denmark	Non-randomized phase I	Post-radiation adults with oropharynx cancer	Mesenchymal stem cells	NCT03874572
USA	Dose-escalation phase I trial	Adult head and neck cancer patients	Bone marrow cell transplantation into the salivary glands	NCT05820711
Brazil	Randomized, multicenter, single-blinded controlled clinical trial	Post-radiation adults with head and neck cancer	Photobiomodulation (Intraoral and extraoral)	NCT05242991
Brazil	Randomized, multicenter, single-blinded clinical trial	Adult patients undergoing hematopoietic cell transplantation	Photobiomodulation (Intraoral and extraoral)	NCT05759975
Spain	Randomized, single-center, double-blinded controlled trial	Adult head and neck cancer patients	Photobiomodulation (Intraoral and extraoral—along with M-health tool)	NCT05106608
USA	Single-arm prospective study	Post-radiation adults with head and neck cancer	Non-invasive acupuncture-like transcutaneous electrical nerve stimulation (ALTENS)	NCT04805528
USA and China	Randomized, multicenter, controlled trial	Adults with head and neck cancer, scheduled to undergo IMRT	Acupuncture	NCT01266044
France	Randomized, multicenter, single-blinded clinical trial	Adult head and neck cancer patients	Auriculotherapy	NCT04222478
Denmark	Single-arm pilot trial	Post-radiation adults with head and neck cancer	Craniosacral therapy	NCT05882890
France	Randomized, single-center, controlled trial	Post-radiation adults with head and neck cancer	Corticosteroids	NCT04584164
Cyprus	Randomized, multicenter, double-blinded controlled trial	Adult head and neck cancer patients undergoing radiotherapy	Thyme and honey spray	NCT04880148
China	Randomized, multicenter, non-inferiority, controlled trial	Adult patients with nasopharyngeal carcinoma	Intensity-modulated radiation therapy (IMRT)	NCT06282497
Switzerland	Single-arm trial	Adults with head and neck cancer	Adaptive radiation therapy	NCT03972072
USA	Randomized, single-center, controlled trial	Adults with squamous cell carcinoma of the head and neck	IMRT (margin-based vs. robust photon radiation therapy planning)	NCT03552965

AAV2-hAQP1 Adeno-associated viral vector encoding human Aquaporin-1, ALTENS Acupuncture-like transcutaneous electrical nerve stimulation, IMRT Intensity-modulated radiation therapy



SIALORREE HYPERMOTILITEIT

- Leeftijd
- Orofaciale dysfunctie
- Neurologische afwijkingen (Parkinson, ALS, CVA)
- Anatomische afwijkingen
 - Postoperatief
 - Littekenvorming
 - Tracheotomie
- Zwangerschap
- Medicamenteus
- Intoxicatie



SIALORREE HYPERMOTILITATIE



Medicament

Acetylcholinesterases
Alprazolam
Alprenolol
Carbacholinum
Clonazepam
Clozapine
Distigmine
Dobutamine
Fysostigmine
Haloperidol
Hg, I of Br bevattende farmaca
Isoprenaline (Isoproterenol)
Ketamine
Metacholine
Muscarine
Neostigmine
Nicardipine
Nitrazepam
Pilocarpine
Pyridostigmine
Remoxipride
Rivastigmine
Salbutamol
Terbutaline
Theofylline
Tryptoreline

SIALORREE HYPERSALIVATIE

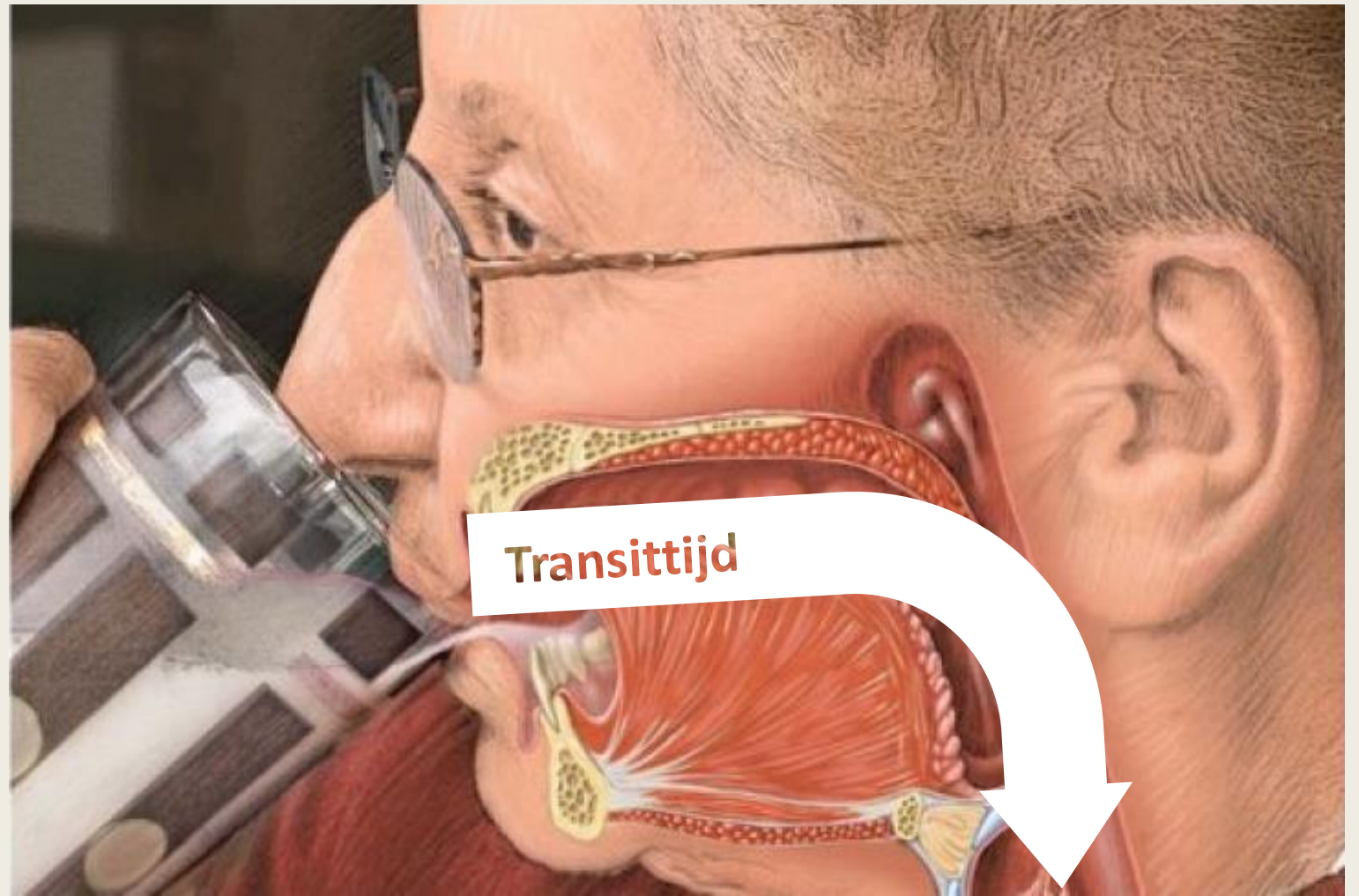


Productie door
speekselklieren

slikfunctie



Slikdysfunctie
na hoofd-
halstumor



Sialorree hypersalivatie

1. kinesithérapie/logopedie

- slikrevalidatie
- houdingscorrectie
- lipsluiting
- Tongpositie en beweeglijkheid

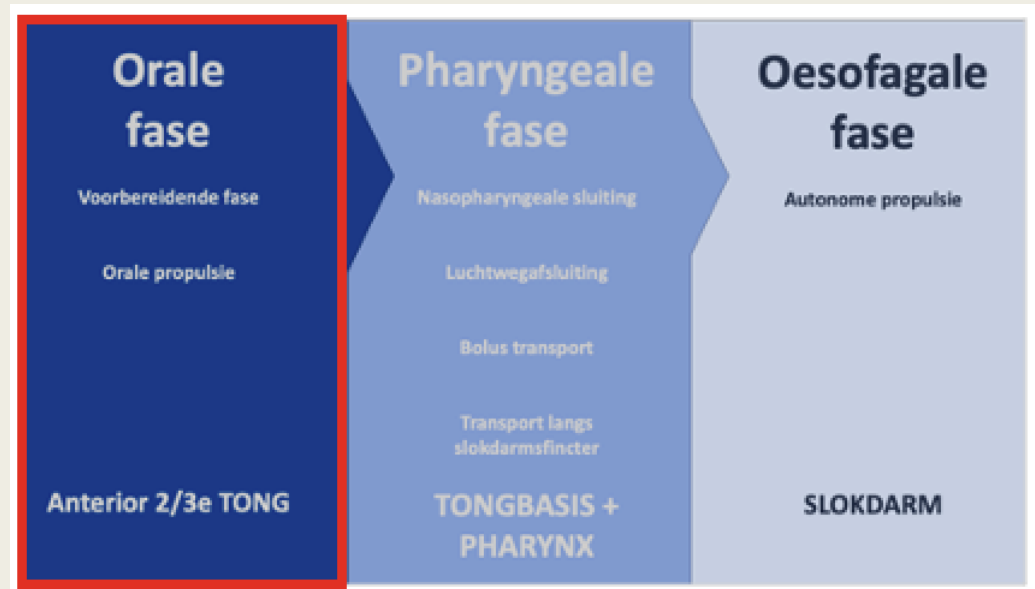
2. Stimulatie mucineuze speekselklieren

- menthol kauwgom
- zwarte koffie



Na 9m:
30% duidelijk beter,
slechts 6% pt sialorree verdwenen

Sialorree hypersalivatie



Orale fase

- tongbeweeglijkheid
- tongkracht
- Oraal transport + littekencontractie tegengaan
- klosprothese
- palatinale verlagingsprothese
- Contact tussen tong en verhemelte verbeteren

Sialorree hypersalivatie



Pharyngeale fase

- houdingsaanpassing
 - rechttop
 - nek in flexie
- tongbasisretractie oefenen
- slikmaneuvers
 - supraglottis slikken
 - krachtig slikken
 - Mendelsohn maneuver
 - Masako maneuver

Sialorree hypersalivatie

3. Medicatie

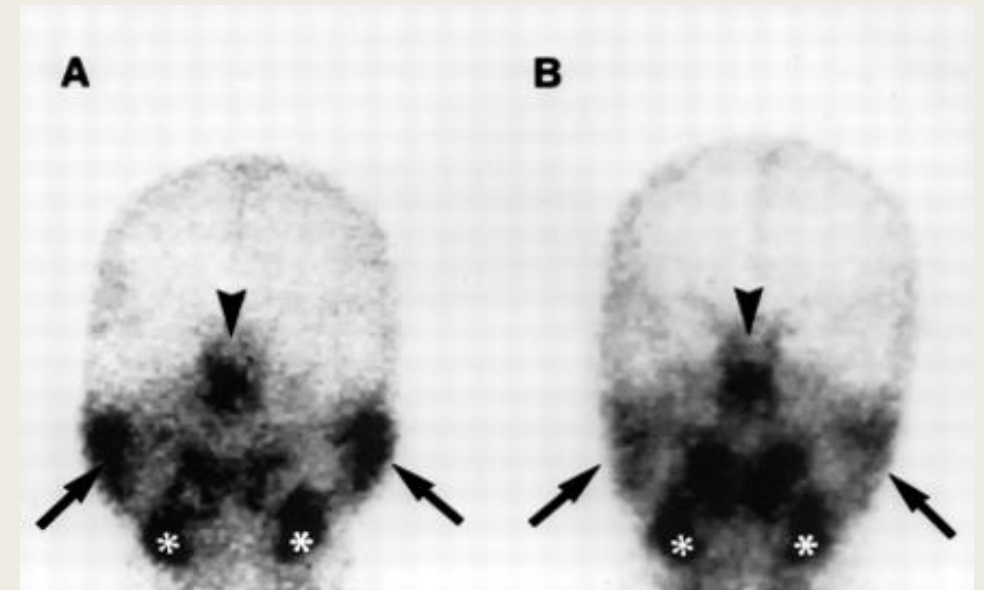
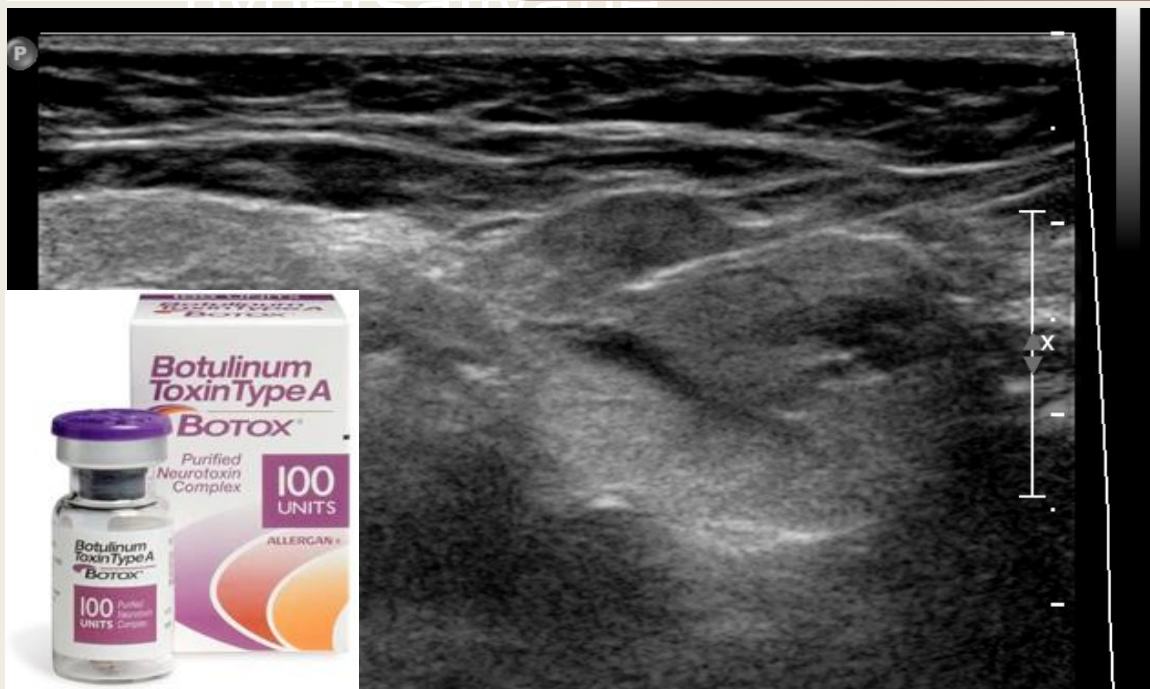
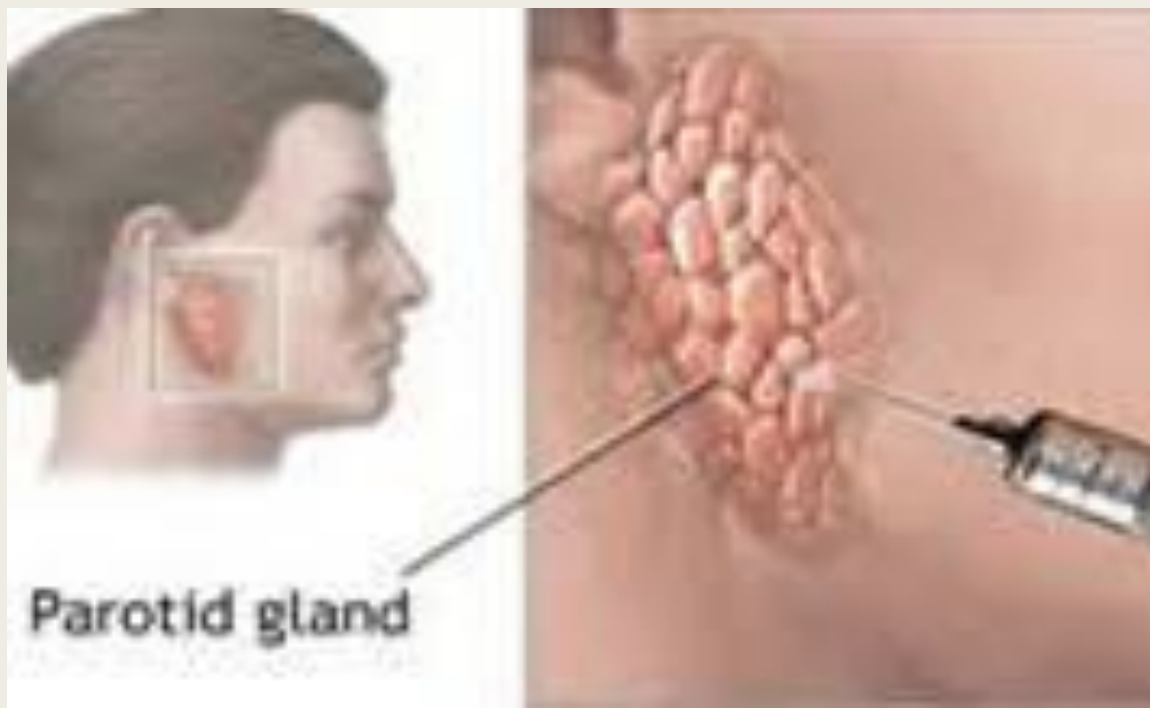
- Glycopyrolaat
 - Routine iv tijdens OK's (**Robinul®**)
 - Sterk effectief, gepaard met minimale bijwerkingen
 - Oraal 0,05-0,15 mg/kg/gift, tot 4dd te doseren.
 - Bijwerking (hoge doses):
 - Urineretentie
 - obstipatie
 - accommodatie stoornissen (contra glaucoom)
- Scopolamine
 - Vroeger als pleister
 - Nu IV in ziekenhuis (Ane + Pal)
- Botox

4. Heelkunde

- Herstellen van orale competentie
- Verwijderen van storende littekens voor slikreflex
- Optimalisatie beweeglijkheid en volume van de tong
- Derivatatie afvoergang
- (extirpatie)

Br. J. OMFS 51(2013) 783-785. Katherine S. George, Kings College Hospital

145 patients: 88%: verbetering
54% compleet verdwenen



Ductusderivatie

Lipofilling lip



Sialorree
hypersalivatie

6. radiotherapie



**RADIO
THERAPIE**





Frequent spoelen met zout water

Veel water drinken

Aerosol

Luchtbevochtiger





Dank je wel

Dank je wel

VRAGEN?