



OBJECTIVES

- Understand the pathophysiology and epidemiology of Parkinson's Disease
- Examine the oral/facial manifestations of Parkinson's Disease
- Explore management options for maintaining oral health in the Parkinson's Disease patient



KNOW THY ENEMY!



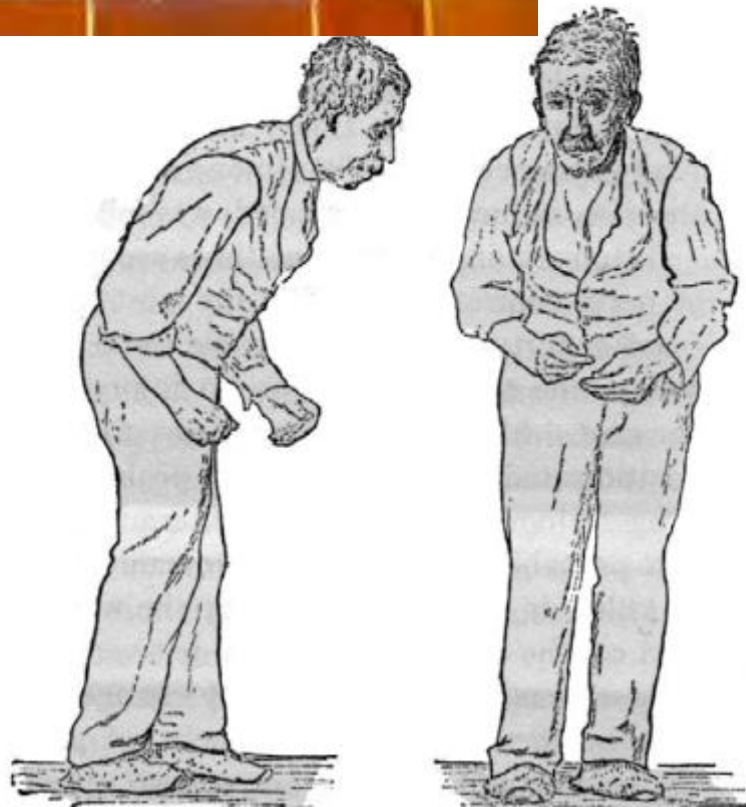
So you can fight back!



ESSAY
ON THE
SHAKING PALSY.

BY
JAMES PARKINSON,
MEMBER OF THE ROYAL COLLEGE OF SURGEONS.

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WHAT IS PARKINSON'S DISEASE?

progressive, disabling neurodegenerative disorder



HOW IS IT DIAGNOSED?

“TRAP”

- Tremor
- Rigidity
- Akinesia
- Postural Instability

no diagnostic test



HOW IS IT DIAGNOSED?



WHAT IS THE CAUSE?

No one knows!

Theories:

- Genetic predisposition
- Uncertain personal factors (ex. head injury)
- Environmental factors (exposure to pesticides, other neurotoxins)



COMMON NEUROTOXINS	
Botulinum Toxin	Lead
Teradotoxin	Ethanol
Tetanus Toxin	Glutamate
Nitric Oxide	Tetraethylammonia
Chlorotoxin	Arsenic
Conotoxin	Mercury

IS THERE A CURE?

not yet!

Treatment? Yes!

Medications

Nutrition

Movement Therapy

Emotional/psychotherapy

Clinical Trials

Surgery (DBS)

Support organizations



WHO HAS PARKINSON'S



WHO HAS PARKINSON'S

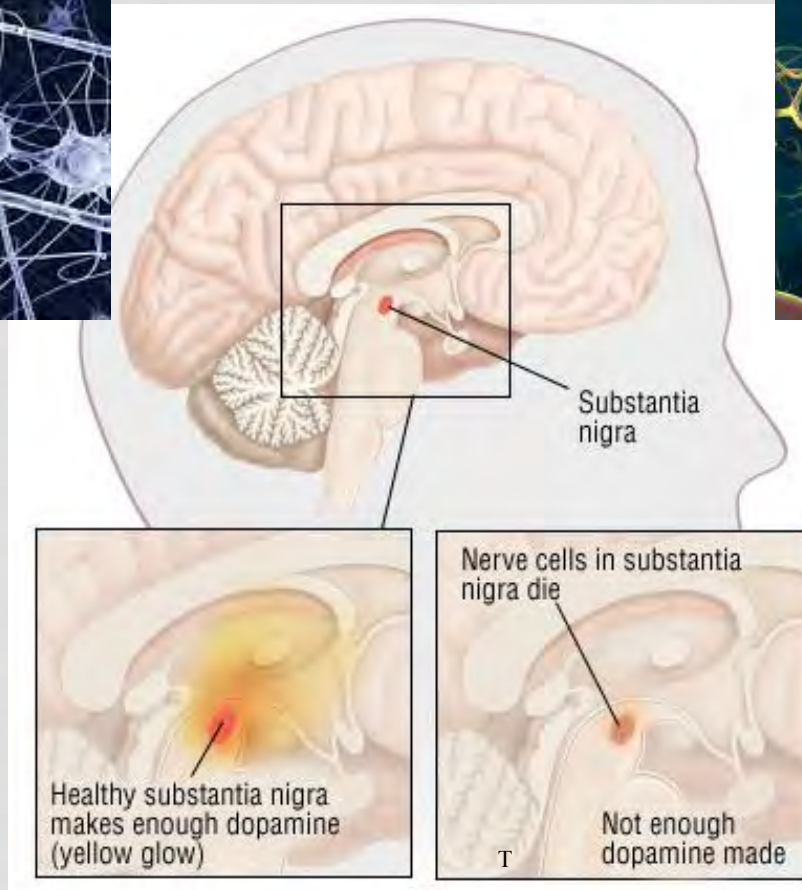
- By 2020 over 1 million in US
 - 10 million worldwide
- 60,000 new cases each year
- 4% diagnosed 50 years or younger
- Men 1.5 X more than women
- Estimated healthcare cost in US:
\$25 billion



*Parkinson's Foundation

WHAT DOES PARKINSON'S DO?

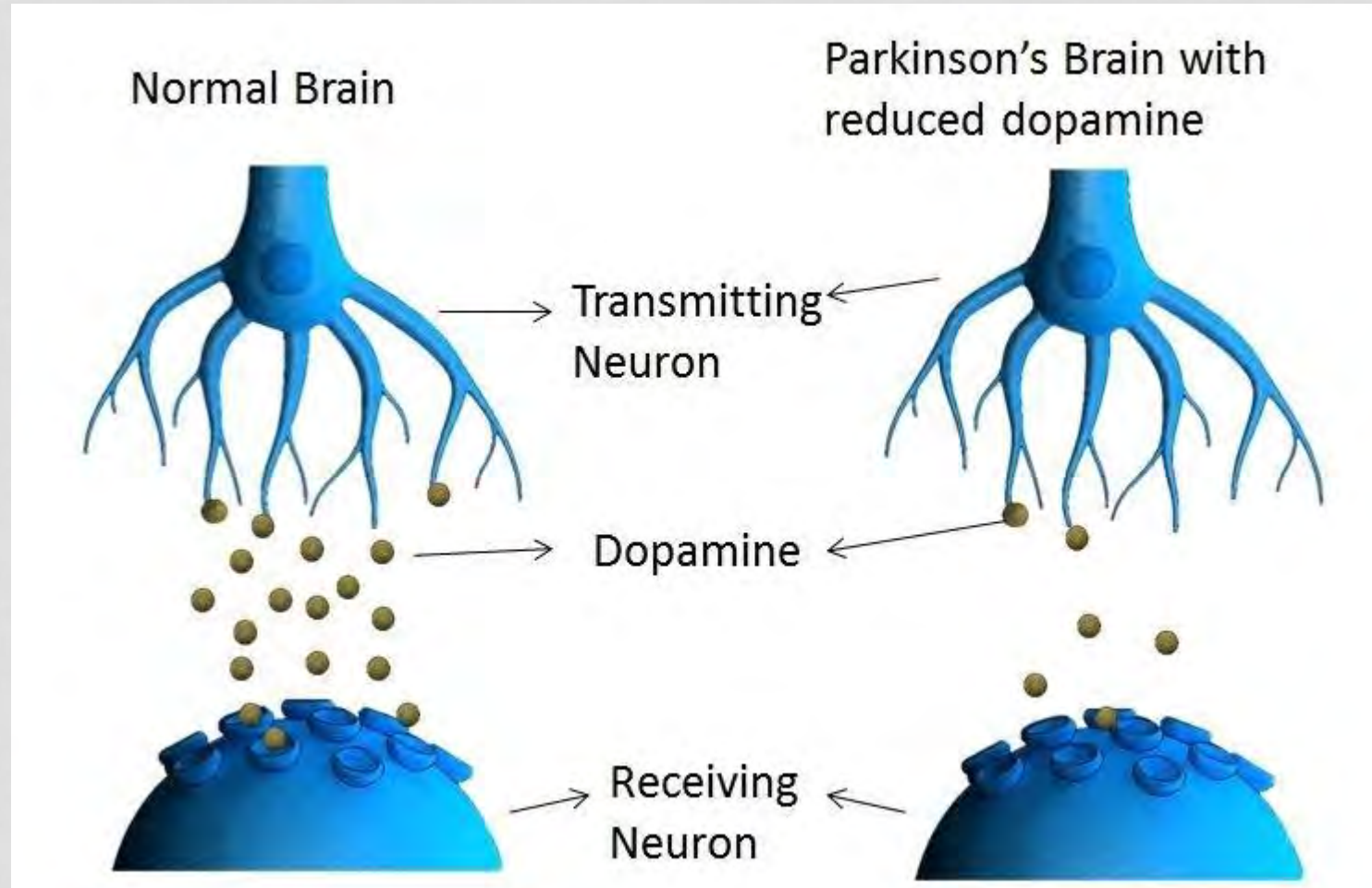
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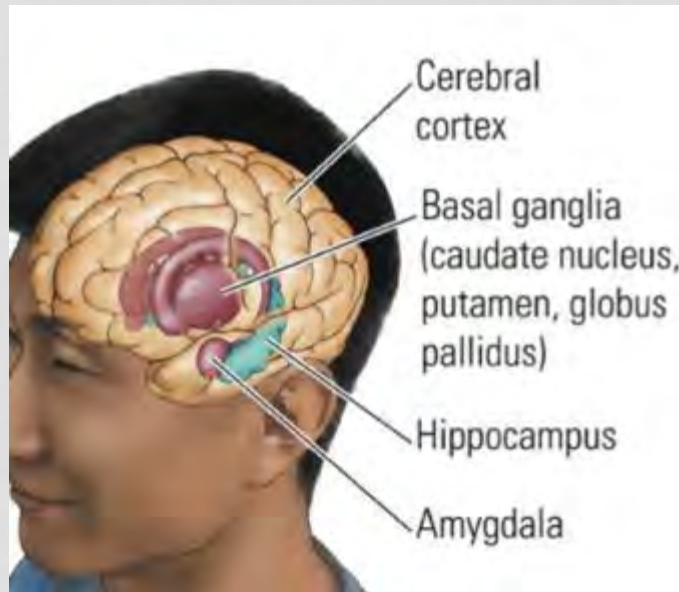
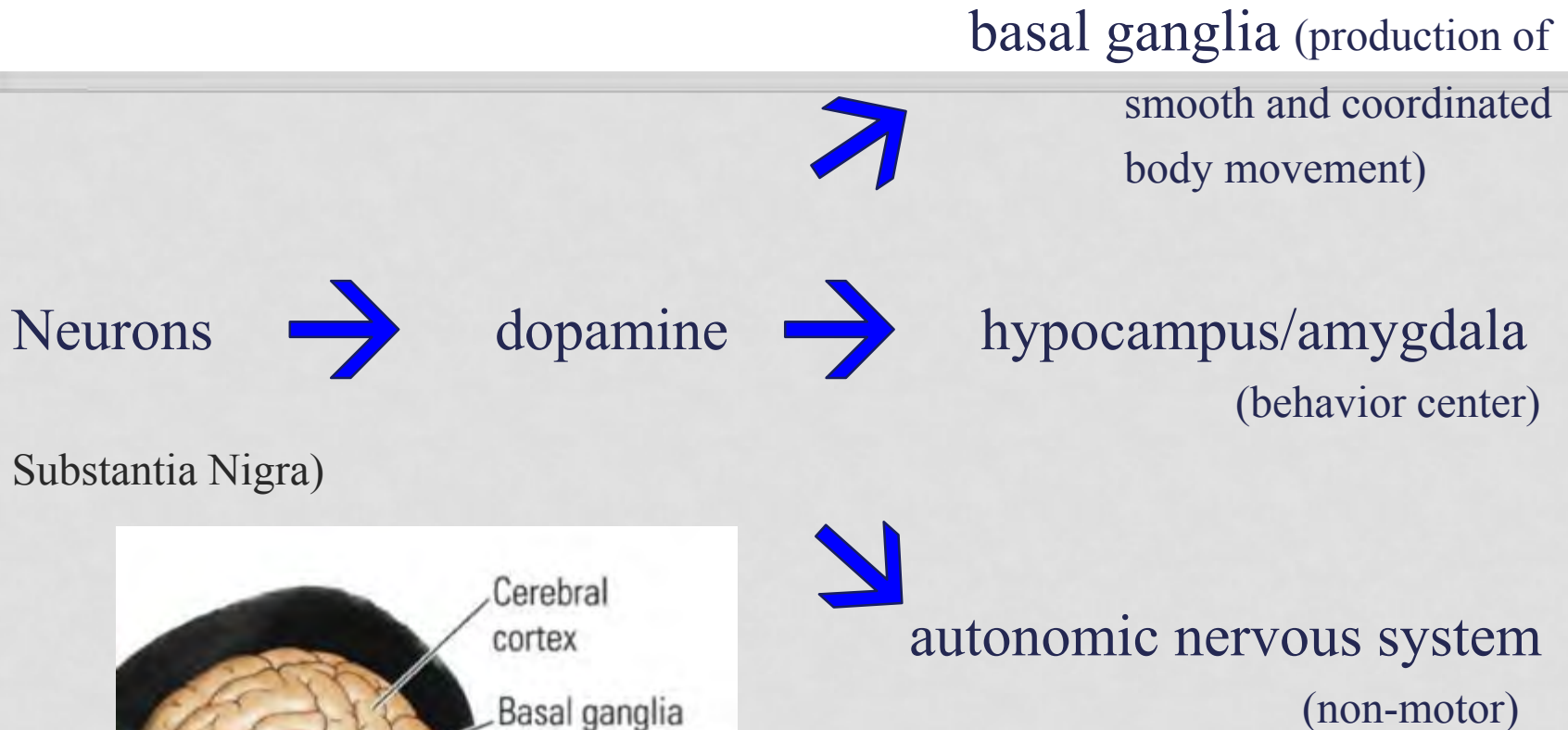
DOPAMINE!!!



HOW DOPAMINE WORKS



PARKINSON'S DISEASE ETIOLOGY

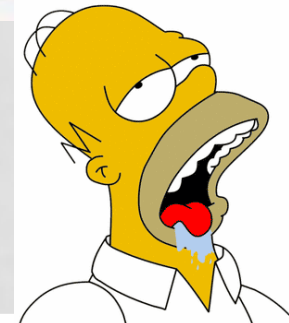


MOTOR SYMPTOMS

- Tremors
- Muscle rigidity
- Slowness of movement
- Postural instability
- Gait disturbance
- Difficulty swallowing
- Drooling
- Tooth grinding
- Inability to close mouth



Catherine Mitzger
13 Octobre 1859



NON-MOTOR SYMPTOMS

- Variations in blood pressure (orthostatic hypotension)
- Cardiac dysrhythmias
- Bladder and bowel dysfunction
- **Xerostomia**

DRY MOUTH



BEHAVIORAL SYMPTOMS

- Depression
- Cognitive impairment
- Dementia
- Medication induced psychosis → disinterest, apathy, forgetfulness → **poor oral hygiene**



ORAL HEALTH CONSEQUENCES

These associated neuromuscular and cognitive defects:

- Enhance progression of oral disease
- Impair home care regimens
- Encumber in-office dental treatment



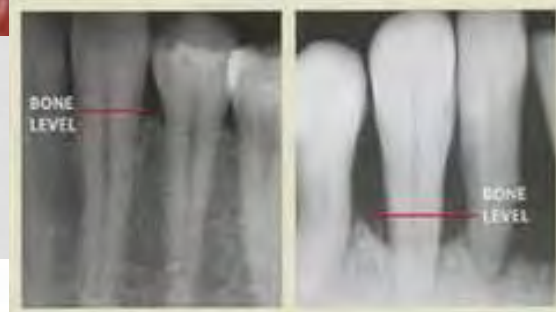
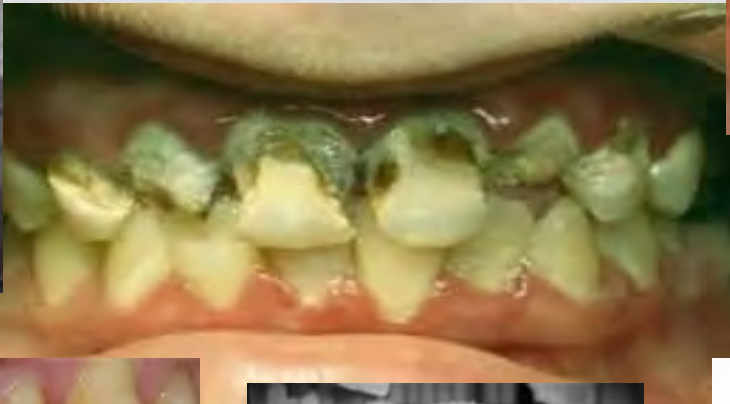
OROFACIAL COMPLICATIONS



**“MASK-LIKE” FACIAL APPEARANCE
SOFT, HURRIED, MONOTONOUS, WHISPERING VOICE**



POOR ORAL HYGIENE PERIODONTAL DISEASE *TOOTH DECAY*TOOTH LOSS



DIFFICULTY EATING * LOSS OF TASTE AND SMELL POOR NUTRITION

Chemical Messengers

#1 most important chemical
messenger for your body

FOOD!



ABERRANT TONGUE MOVEMENTS

BRUXING (TOOTH GRINDING)

POOR LIP CLOSURE



BURNING MOUTH SYNDROME



TMJ DYSFUNCTION



DRY MOUTH (XEROSTOMIA)



DROOLING ANGULAR CHEILITIS



ILL-FITTING APPLIANCES HAMPERED DENTAL TREATMENT



PARKINSON'S DISEASE AND ORAL DISEASE

- Dental Caries and Periodontal Disease
- Sialorrhea and Drooling
- Xerostomia
- Burning Mouth Syndrome
- Mastication Disorders
- Bruxism
- Subjective Taste Impairment



DENTAL CARIES

- Fewer teeth and higher caries rate between 60 and 80._(Hanaoke)
- Difficulty maintaining oral hygiene_(Hanaoke)
 - Motor impairment
 - Apathy
 - Depression
 - Dementia

As PD progresses → Caregiver/family member_(Debowes)



PERIODONTAL DISEASE

- Higher rate of periodontal disease between 60 and 80_(Hanaoke)
- Systemic peripheral inflammation → Progression of PD_(Ferrari)
 - Alzheimer's Disease
 - Multiple Sclerosis
 - Stroke



SIALORRHEA AND DROOLING

- Sialorrhea
 - Accumulation of saliva
 - Men twice as likely to develop (Rana)
 - Extreme cases → drooling
- Drooling
 - Nocturnal: 60%
 - Diurnal: 30%
 - Typically 3 years after nocturnal (Kalf)
 - Associated more severe PD (Kalf)



SIALORRHEA AND DROOLING

Treatment

- Pharmacological
 - Anticholinergics
 - Ipratropium Bromide
 - Glycopyrrolate
 - Botulinum Toxins A and B_(Srivanitchapoom)
- Nonpharmacological
 - Radiation (proposed)_(Borg)
 - Chewing gum_(South)
- Angular cheilitis
 - Mycolog II



XEROSTOMIA

Dry mouth

- Affects 55% with PD_(Friedlander)
- Twice as likely as general population_(Clifford)
- Often drug induced
- Associated with dental decay

Treatment

- Ubiquinol (CoQ10) 100mg/day_(Ryo)
- Sipping water, sugar-free gum, xylitol



BURNING MOUTH SYNDROME

- Burning sensation without physical or laboratory correlates
- Prevalence of 24% with PD_(Coon)
 - 8% general population
 - Postmenopausal women and elderly
- Psychological factors
 - Depression, anxiety, compulsive disorders_(Jääskeläinen)
- Hypothesized cause dopamine dysregulation_(Hagelberg)

Treatment_(Jääskeläinen)

- Capsasin
- Alpha-Lipoic Acid
- Antidepressants



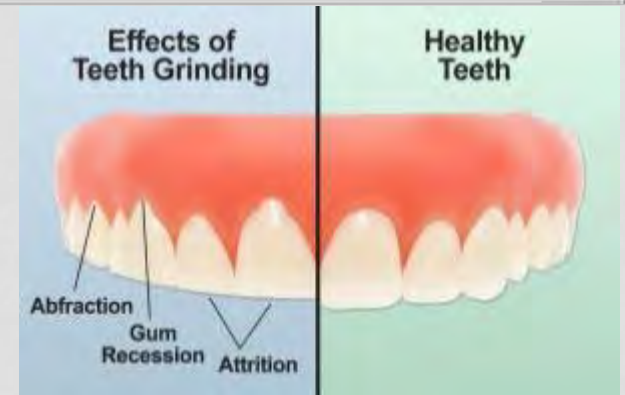
MASTICATION DISORDERS

- Reduced...
 - Jaw mobility
 - Jaw movement speed
 - Tongue mobility
- Complicates...
 - Formation and movement of food bolus
 - Chewing
 - Swallowing
- Impairment correlated with progression of PD_(Bakke)
- Important to keep teeth



BRUXISM

- Abnormal oral activity
 - Clenching
 - Grinding
 - Day and night
- Results in tooth damage, TMJ Disorder_(Tan)
- Associated with medications



Treatment

- Oral splints
- Botox_(Sheffield)



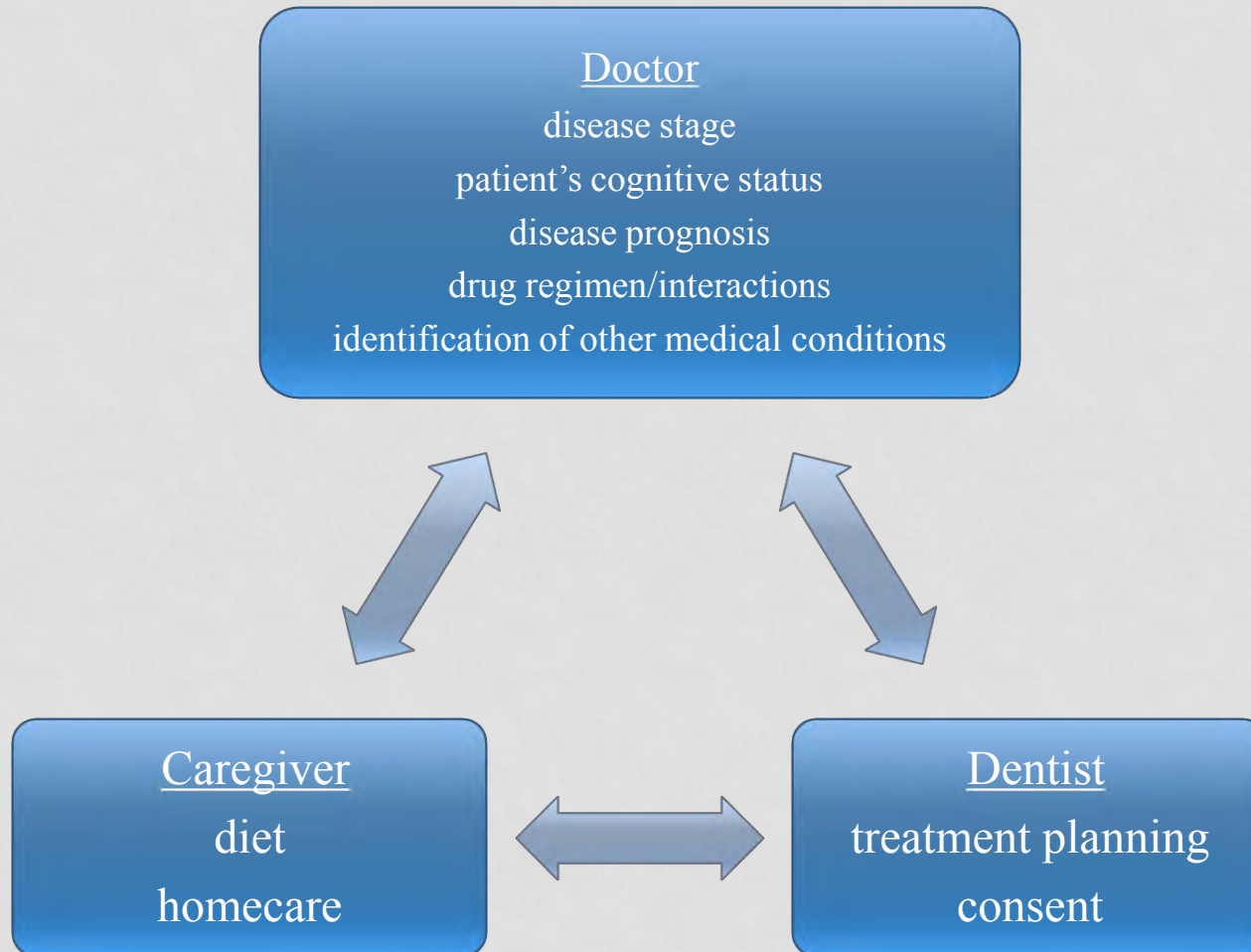
TASTE IMPAIRMENT

- Reduced or altered sensation
- Causes
 - CNS degeneration
 - Poor oral hygiene
 - Xerostomia
 - Zinc deficiency
 - Medications_(Kashihara)
- Effects
 - Loss of appetite
 - Malnutrition
 - Poor fitting dentures
 - Tendency toward carbohydrates_(Kashihara)



MANAGEMENT OF ORAL COMPLICATIONS

A MULTIDISCIPLINARY APPROACH



MANAGEMENT: POOR ORAL HYGIENE

****Prevention is key****

Maintain good oral health with good home care and regular dental visits throughout life ****Recommend 3 month recalls****

- Early stages — self care
 - mechanical aids: toothbrush with large handle
electric toothbrush
access flossers
proxibrusher
collis-curve toothbrush
 - chemical aids: fluoride toothpaste, rinses, varnishes
fluoride trays
- Later stages — **the role of the caregiver**
 - assist patient with home care
 - assist patient at dental visits
 - receive oral, written instructions from dental team





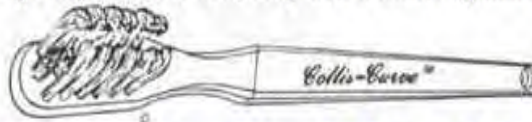






The Collis-Curve (TM) Toothbrush

..a breakthrough in preventive dentistry and a leader against dental disease



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800-298-4818

It's simply a better brush

- Brushes three sides at once
- Easier for care providers
- More comfortable for care recipients
- Half the time to remove plaque than other brushes
- Every study proves increased efficiency

This brush is perfect for:

- Young children
- People with dental braces
- Caregivers and Parents
- People with limited hand and/or arm motion
- Or anyone!

What the Experts say:

Special Care in Dentistry Magazine said; "The Collis-Curve and Interplak toothbrushes were the most effective in removing plaque.." Vol. 13, No 1, 1993, pg 13

Journal of the American Dental Association; "...in the gingival index..the difference was statistically significant with more improvement for students who used the [Collis] curved toothbrush.in the plaque index..more improvement is indicated for students who were issued the [Collis] curved toothbrush...... The Statistically significant improvement among students using the [Collis] curved toothbrush would appear to be a direct result of the functional efficiency of the brush over that of the regular brush.On the basis of results obtained in this study, it appears that the use of the [Collis] curved bristle brush significantly improves the condition of the gingiva and helps in removing dental plaque." - JADA Research Reports, Vol.115, Nov. '87

This is why the Collis-Curve Toothbrush works better:



Curved Bristles

The Sulcus is the space between the tooth and gum where bacteria breed causing cavities and bad breath.

Your dentist uses curved instruments such as a scaler to clean your teeth in the sulcus.

The cleaning action of the Collis-Curve Toothbrush approximates that of 100 scalars working at once to clean your teeth all over, including in the sulcus!

Design:

The curved design of the bristles allows you to clean all 3 sides of your teeth at the same while eliminating the danger of poking the bristles into your gums.

The unique bristle shape and design makes full use of the time the average person spends on their tooth brushing routine and is ideal for everyone.



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MANAGEMENT OF DENTAL VISIT

****prevention **early treatment ** maintain 3 month recalls**

Often hampered by patient's ability to keep mouth open, limited opening, tremor, involuntary movement of head, mouth, tongue, difficulty in swallowing, anxiety

ACCESS

- dental office, operatory- handicap accessible
- allow appropriate time to allow patient with slower gait to negotiate trip to dental office, operatory
- caregiver should be present if patient requires assistance to be seated in dental chair

TIMING

- short appointments (no more than 45 minutes)
- morning usually better
- treatment should commence 60-90 minutes after administration of medications

SAFETY

- incline dental chair at 45 degrees to help with swallowing
- extra-oral props, intra-oral bite blocks
- high speed evacuation
- raise chair slowly to prevent orthostatic hypotension

COMFORT

- empty bladder before dental visit
- dentist and staff - identify themselves each time, use simple words, short sentences, smiling, direct eye contact, reassuring touch
- caregiver can be present

ACCESS

- Office and operatories handicap accessible
- Allow for “travel time”



- Caregiver there to help!

TIMING AND SAFETY

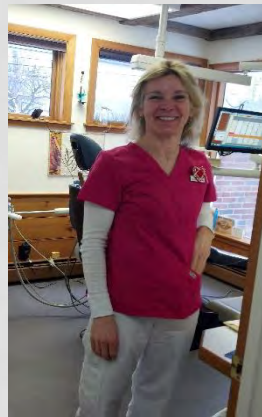


COMFORT





Working together



to make the most of your dental visit:

THANK YOU!

Any Questions or Comments?

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