



## A Philosophy of Oral Health Care for the Older Adult

**Introduction:** Firstly, this program is designed more as a philosophy of oral health care rather than a “technique” course. Secondly, this philosophy is not my own, but a synthesis of philosophical renderings from multiple sources, mentors, and colleagues with whom I have had the privilege of knowing and working. The idea of risk-based treatment planning is certainly not new. In fact, G.V. Black, the father of modern dentistry was keenly aware of the need for prevention and patient education for the maintenance of the human dentition. It is important to recall his statement “Extension for PREVENTION”! Friend and colleagues wrote a text published in 1944 entitled “The Dentist and His Patient”. This is a fascinating and highly relevant text for today’s practitioner. The message of the book is that oral treatment failure is due primarily to the lack of educational information and follow-through provided by the dental team to the patient. The writings of the late Bob Barkley are also a wonderful resource on the practice of preventive dentistry. Treatment needs to be paired with the patient’s circumstances, temperament, and objectives AT THAT MOMENT IN TIME with goal of providing enough information so that ultimately the patient will treasure and care for their teeth, select the best treatment, and understand that maintenance is paramount. Treatment modalities are tied directly to the patient’s level of dental knowledge and motivations.

My primary impetus for striving to develop a philosophy was out of frustration. Dentistry is a difficult discipline as one is dealing with the psychology and motivations of the human mind, the vagaries of dental diseases in a microbiologically and mechanically hostile environment, operator sensitive materials, difficult and very “technical” techniques, and the limitations of the patient, practitioner and the dental team. In addition, with special patient populations including geriatrics, the physical, emotional, medical, and legal issues make dental treatment all the more difficult. Care providers, physicians, social workers, family members, and others must be a part of the process of treatment and bring their own mixed bag of issues.

The overriding goal of the dental profession is to improve the oral and therefore, systemic health of the patient and to empower them to maintain their dentition throughout life with as little surgical intervention as necessary. The time honored goal of “saving teeth” is certainly something to strive for. Implicit in this philosophy of “saving teeth” is that it should be coupled with sound engineering sense such that the use of non-restorable (really the term USEFUL should be used) teeth is avoided.



### **General Statistics Regarding Geriatric Populations**

1. Average life span 77 years of age in USA
2. A person born today can expect to live to 79 years of age. At the turn of the century the average life span was 47.
3. 20% of the population will be over 65 years of age by 2020-2025
4. 85 yrs and older are the fastest growing segment of the populations.
5. 35 million Americans are over the age of 65
6. If a person lives to age 65 they statistically will live approximately 18 more years
7. 20.6 million older women and 14.4 million older men – ratio increases with age(2000)
8. Minority population 65 yo increase by 219% (b/w 1999 – 2030)

### **Mental Status Considerations**

Dementia: progressive: >50% of those over 85 (Alzheimer's, Vascular, EtOH, Parkinson's etc.)

Delirium: generally reversible and commonly seen in dementia

Depression: can be reversible, treatable; multifactorial

- a. 10-20% with dysphoria
- b. 15-25% with clinical depression
- c. Acutely hospitalized - 20-25%
- d. Chronic Care facilities – 12-20%

Memory Impairment - ~40% over age 85 with severe memory impairment

### **Medical Considerations – review of systems**

0. General – constitutional signs, appetite, wt loss or gain
1. Skin – hair distribution, nails, skin lesions
2. Psychiatric – mental illness and treatments
3. Neurological – stroke, seizure, dementia, delirium, depression, mental illness, movement disorders (Parkinson's, Huntington's etc.), trauma
4. Cardiovascular – valvular disorders, CHF, MI, Angina pectoris, Hypertension, peripheral vascular disease, arrhythmias (atrial fibrillation)
5. Pulmonary – asthma, tobacco abuse, TB, Chronic bronchitis, emphysema
6. GI – gall bladder, GERD, Crohn's, ulcerative colitis, liver disease
7. GU – renal disease or other urinary problems, prostate
8. Hematopoietic – coagulation disorders, cancer, anemia
9. Orthopedic – prosthetic hip, knee, joints, arthritis(osteoarthritis, RA), bisphosphonates (oral, IV)
10. Eyes, Ears, nose, throat – visual/hearing deficit, chronic sinusitis, swallowing difficulties
11. Cancer, chemotherapy, radiation therapy, head and neck cancer including tumors such as lymphoma (what are the portals of radiation and dosages)



### **Functional Considerations**

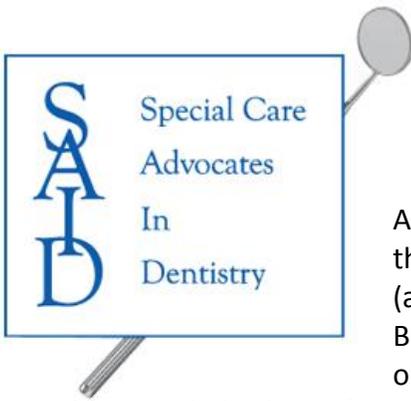
50% of those over 85 need assistance with daily functions

Dental therapeutic interventions should all be aimed at optimal oral and systemic health of the patient keeping the patient's BEST interests in mind.

The patient or their care providers MUST be co-therapists and active participants in their care if we are to succeed at oral health reconstruction and/or preservation. One must bear in mind that a risk assessment and a treatment plan based on the level of risk AT THAT POINT IN TIME is paramount.

### **What are the risks involved with patient care and dental treatment?**

1. Inactive involvement on the part of the patient (apathy, disinterest, "lazy", or not aware of oral health promotion and preventive strategies?)
2. Physical limitations: Can these limitations be overcome in some manner such that the patient can achieve adequate, predictable oral health thereby preserving the natural dentition or prosthetic work?
3. Emotional limitations: How labile is the patient emotionally? How responsive is the patient to oral health education?
4. Medical limitations or risks: Can the patient withstand treatment? Can the patient adequately maintain their dentition? Is there adequate salivary flow and composition? Can this be managed or altered?
5. Lack of or suboptimal oral hygiene (PS?; GS?): Can this be improved through education?
6. Dietary risk factors: Have these factors been identified? Can these be "managed" or altered to diminish oral disease? Is a diet diary appropriate?
7. Hereditary risk factors: What are the familial patterns of tooth loss? How resistant is the patient to caries or periodontal disease?
8. Limits of dental materials: What is the ideal material given the patient's current level of risk? Can, or should, this material be replaced at a future date if the patient's dental knowledge and care for their teeth increase to an appropriate level e.g. gold inlays/onlays replacing GI etc?
9. Limits of dental team: Is the team comfortable with engineering and reconstructing the mouth given a change in dental knowledge?
10. Financial risks: What is the patient's dental knowledge level? If high, can a payment system be arranged as to not deprive the patient of "optimal care" given their high dental IQ?
11. Esthetic risks: What is the display given a full smile? Is this the full smile or a guarded smile due to embarrassment? Is gingival surgery "needed" or orthodontics to level or optimize gingival display?
12. Occlusal and stress/fatigue risks on the part of dental materials and teeth proper: Is parafunction present and can this be managed? Is anterior guidance appropriate to achieve predictability in restoration? Can the dentistry be engineered and protected in a predictable manner? Are occlusal planes appropriate to avoid posterior contacts in function?
13. Bacteriological risks (periodontal disease, caries?): What is the pattern of tooth loss and why were the teeth lost? What is the pattern of dental restoration?
14. Others???? I am sure one can think of many more.



As you can readily see there are numerous risks that can bring failure to the most diligent dentist! The patient and dentist must be fully engaged (and/or caregiver) and realize the limitations of the treatment provided. Both must be fully aware of their responsibilities. Many of the above can only be partially controlled. Therefore, the patient must be educated on

the risks and limitations of the planned dental care. Careful hygiene, adequate diet, stress management, and control of forces (physically being careful how and what one eats and functions) can mitigate many of these factors, however.

A critical step in the treatment planning stages is a determination of the level of cooperation and coordination of the patient. I classify patients into 4 categories regarding their level of cooperation:

1. **Actively cooperative** – no resistance and fully engaged during treatment
2. **Passively cooperative** – engaged, but perhaps cannot follow certain commands  
i.e. slide your jaw to the right or left.
3. **Passively uncooperative** – the patient may be engaged to a certain extent, but perhaps their posture or orofacial musculature greatly impedes access to the oral cavity i.e. an individual with severe cerebral palsy, but intact mentation
4. **Actively uncooperative (combative?)** actively avoiding care, ranging from gentle avoidance to out-right combativeness.

The patient's level of coordination or ability to follow specific commands is a part of this classification. If the patient cannot follow commands despite being "cooperative" can precision dentistry be engineered? Perhaps then, certain individuals who cannot properly cooperate or follow instructions receive a particular material (glass ionomer or amalgam) and a fully engaged individual with good dental knowledge may receive gold castings. Level of hygiene, diet, and capacity for control of disease can all be impacted by the level of cooperation of a given patient. In some cases, such as para or quadriplegics the caregiver is fully engaged and able to clean the patient's mouth so well, that high quality materials can be used i.e. gold or ceramic. Of course this is dependent on whether the patient can follow specific commands in order to engineer the dentistry.

#### **Examples of patients who may be uncooperative (Actively)**

1. Patients with severe, moderate, or mild mental retardation (mentally handicapped)
2. Patients with autism
3. Cerebral palsy with consequent mental retardation (NOT ALWAYS!)
4. Individuals with traumatic brain injury (Closed or open head trauma)
5. Patients who've suffered from stroke and who have mental status changes
6. Certain other patients who have mental status changes
7. Patients with dementia of various causes (Multi-infarct, Alzheimer's disease, Pick's disease etc)



All these types of patient's may be passively cooperative (instead of actively uncooperative) depending on the level of mental disability, but uncoordinated and therefore not able to follow specific commands. Therefore, certain dental procedures may not be able to be engineered i.e. crown and bridge, implant, dentures etc. Dental treatment may therefore be limited to basic restorative, extractions, and of course preventive and caregiver education.

### **Surgical Treatment and Restorative Dentistry**

All treatment discussed below presumes that the patient (and/or care provider) has been fully informed of the risks to their dentition and that said risk factors have been controlled as much as possible. The treatment follows the risk assessment. It is possible that the patient may improve progressively over time and therefore treatment planning may be altered to account for the improvement in the oral environment. It is indeed possible that the patient may regress! The patient MUST understand that if this happens the risk to their oral health will go up with loss of function resulting! Please bear this in mind as we discuss these various topics.

### **Single Tooth Restorative:**

<http://www.seattleinstitute.com/content/articles/B%26WWhentoRestoreWhentoRemove.pdf>

The above website was taken from Dr. Frank Spear's Seattle Institute of Advanced Dental Education website's resources file. This is a beautiful document discussing how, when, and why to save and restore a tooth vs other alternatives. Again, materials and techniques should comport with the patient's dental knowledge and capabilities at that time. At a future date, if the environment improves, a more "definitive" restoration may be placed. Carl Misch states generally (in his text Contemporary Implant Dentistry - an excellent text by the way) that if you feel that you can get 10 years or so by restoring the tooth in question (con't) with a crown then a conventional crown should be placed. I feel this is a very good guideline. In older patients, however, a lower number of years may be acceptable. Implants should be TREATMENT plan driven not just prosthetically and "risk" driven.

### **Provisionalization**

I generally like to make provisionals in an indirect manner. A GOOD set of casts in improved stone are poured and mounted along with a facebow. A diagnostic wax up is performed and silicone shims are made. The patient's teeth are prepared, an impression of the preparations are made and poured in fast setting die stone (Gray Rock or Snap-Stone – these are trademarked), separator and die spacer is applied, shim is filled in the appropriate tooth depressions and placed on the cast of preps and placed in a pressure pot for about 4 minutes. This is disassembled and the provisionals are trimmed, seated, occluded, and cemented. This technique allows for beautiful, well fitting, long lasting provisionals. Provisionals should be well fitting and used as a diagnostic tool allowing for occlusal study, preparation reduction, envelope of function, and protection of the dentogingival complex.



### **Preprosthetic surgery**

I perform preprosthetic surgery to remove impediments to predictable prosthetic reconstruction. Analyze the ridge form for pendulous tuberosities, exostoses, and hyperplastic retromolar pad areas. The final diagnosis can be made at jaw relations if dentures are planned and you are uncertain of the diagnosis. Likewise, crown extension surgery, gingivectomy etc is used to improve the periodontal environment and avoidance of encroachment on the biologic width. A good ferrule is critical to retention and resistance form of crown restorations. The canons of periodontal surgery should be followed.

### **Multi-tooth Reconstruction**

I greatly appreciate the Pankey-Mann-Schuyler philosophy of reconstruction and appreciate the predictability of this technique. The teeth are prepared and restored in the following order: lower anteriors, upper anteriors, lower posteriors, and upper posteriors. I think it is critical that materials should be opposed to like materials if at all possible. When communicating with the laboratory, a cast of provisionals, custom incisal guide table, indices etc should be sent to increase the predictability of the final result. When preparing multiple anterior teeth that are acceptable in terms of shape, form, and position and “every other tooth” technique can be used for lab communication.

### **Fixed/Removable Combinations**

I like to pick up the final survey crowns for the waxing of the removable partial denture framework. This gives the technician an opportunity to change contours of the crowns prior to cementation. Also, material wear should be kept in mind e.g. plastic tooth opposing natural teeth or crown and bridge material. These should be similar in terms of hardness and wear characteristics. Cast gold onlays or amalgams can be placed if needed. Altered cast impressions or functional impressions should be performed on distal extensions.

### **Acrylic Removable Partial Dentures**

These are wonderful to use to educate the patient and for use as a temporary restoration. This may be an individual’s permanent restoration if dental knowledge of risk factors cannot be controlled. A temporary partial denture may be useful for a patient considering implants vs RPD. If they are very comfortable with the RPD, then a definitive cast RPD might be considered. If the provisional partial is completely unacceptable, then implants may be considered.

**\*Fixed and elaborate removable prosthetic work should be reserved for those patients, regardless of financial constraints, who have learned to treasure their teeth and understand the risks (perhaps a lifetime of risk depending on the patient) to their dentition, and how to care for their teeth in a precise manner. Again, this philosophy comports with time honored philosophies from several “eras” of restorative dentistry.**



### **Complete Dentures**

I generally discourage patients at all costs (within reason) to avoid dentures. It is important to remember that a denture patient is indeed a dental cripple. The maxillary denture is somewhat equivalent to a below the knee prosthesis and a mandibular denture is somewhat equivalent to a below or at the hip lower limb prosthesis. In order to educate a patient regarding dentures, I will occasionally fabricate an acrylic palatal coverage prosthesis and send them home to eat, drink, and speak with this in their mouth. This gives them the opportunity to experience the feel of the prosthesis on the palate.

I use central bearing points for jaw relations, occlusal balance (centric and functional) at delivery and recalls.

### **Immediate Dentures**

Immediate dentures are a great service for your patients. Preoperative photographs, casts, and other tools can allow for a relatively “smooth” transition from dentulism to edentulism. By placing immediate dentures, one can help to preserve the neutral zone, vertical dimension, speech patterns, mastication, and facial appearance. If you examine the literature on lower limb prosthetics, patient satisfaction raises as the limb prosthesis is placed closer to the time of amputation. The literature on immediate dentures tends toward this same pattern.

### **Root Caries**

The “treatment” of root caries involves mostly prevention and patient education! If the underlying risk factors are not controlled or diminished, then surgical treatment may be more harmful than good! Salivary flow and quality, hygiene habits, functional impediments (paralysis, CP, MS etc), medications and systemic health, dietary risk factors must ALL be considered if treatment is to be predictable. Surgical treatment with gingival or osseous surgery must follow the basic canons of periodontal surgery (keratinized tissue quantity, esthetic considerations, bone removal between teeth, adjacent teeth etc). Magnification must be used. I use a 6.0 or 6.5 loupe with lighting and can see most everything.

Important point: If the patient has medical or other problems (mental status or physical status) that preclude either the patient or the care provider from providing for adequate oral hygiene and control of risk factors, then all the above is somewhat a moot point.

I wish to include this lovely article on the benefits of preventive dentistry and the pitfalls of the surgical treatment of dental caries. I also encourage you to read (or at least skim) the works of William Gies (the famous Gies Report 1926), Alfred Asgis, Kudler Friend, LD Pankey, and Bob Barkley. These will reinforce the fact that “preventive dentistry” is most certainly nothing new and that the need for it is even greater today! Preventive dentistry based in consumer education takes much time and effort, but this is the foundation for a caring, and ethical dental practice.



A Philosophy of geriatric dentistry: minimally invasive treatment  
*Allen Samuelson DDS*  
Clinical Associate Professor

**What is the purpose of dentistry?**

**When treating (geriatric/spec. needs) patients:**

- Think like a FRIEND first (humanity) then...
- Think like a SOCIAL WORKER/OT-PT then...
- Think like a Medical Doctor. Then....
- Think like a DENTIST
- Make the dental visit FUN and LOW STRESS—mix HUMOR with INTEGRITY
- .....follow your patients home.....

Cure sometimes, treat often, comfort always.  
Hippocrates of Cos

**Canons of Preventive Dentistry**

- Primary Preventive Dentistry
- Secondary Preventive Dentistry
- Tertiary Preventive Dentistry
- Re-evaluation

**Components of Primary Prevention**

- Cognitive/Physical/Medical status
- Knowledge (health literacy)
- SALIVA
- Diet
- Fluoride
- Habits
- Oral Hygiene

**Philosophy: YOUR COMPASS ROSE**

**Social/Personal Goals**

Return the patient to comfortable function and enable them to fulfill their chosen social role empowered to treasure their teeth and act as missionaries for oral health!



### **Practice Goals**

Getting the patient to say “yes” is the consummation of ethical, patient centered and preventive-directed practice!

### **Treatment Goals**

Dignity  
Safety  
Comfort  
Function  
Health  
Esthetics

Durability and excellence at every step

Be creative but careful

Avoid the twin dangers of condemning teeth too early or (worse?) restoring them too soon with expensive tx. Wait/watch.... Educate and inspire!

### **Oral Health Goals** (any age pt!)

- Preservation of DIGNITY, ENCOURAGEMENT and HOPE – this builds and solidifies trust.
- Preservation of natural tooth structure
- Preservation of teeth and avoidance of exodontia
- Preservation of function on natural teeth and avoidance of removable prosthetics (and full coverage fixed)
- Special attention to the avoidance of removal of lower teeth and avoidance of a lower denture
- Utilization of existing removable appliances when possible!
- Limit pain, expense, invasiveness of treatment
- Empower patients/caregivers to treasure and care for their teeth/oral health
- Empower the patient/caregiver to value Systemic and oral HEALTH (diet, exercise, oral hygiene, knowledge)
- Educate patients/caregivers on the realistic possibilities of therapy given their circumstances, temperament and objectives
- Maximize preventive tx (fluoride, OHI, CHx etc.)

As my philosophy of dental care matured, my self-image changed from that of a healer to one of an interested, empathetic teacher of health who is capable of good restorative dentistry.

*Dr. Robert Barkley*



## **The Ecology of the Older Adult**

History of the Patient's Life  
Where Born  
Vocation/Profession  
Family  
Interests  
Retirement  
Integrity vs. despair

## **Psychosocial Environment**

Level of cognitive function  
Depression (or sadness)  
Living arrangement/Support system  
Access to appointments/transport  
Access to oral hygiene in home/facility!  
Caregiver  
    Dependency  
    Stress  
    Elder Abuse

## **Functional Environment**

Level of physical activity  
Level of energy and engagement  
Strength  
Mobility  
Dexterity  
Vision  
Hearing  
Balance

## **Medical Environment**

Medical history  
    Safety/medical emergency  
    Direct impact on treatment/medications  
    Long term oral health impacts  
Level of general prevention/health  
Medications/Adverse Drug Reaction  
Medical Records/Tests and Lab results

## **Financial Environment**

In 1890 almost 80% of those over 65 worked  
In 1989 only about 17% of those over age 65 work  
By 2030 50% of one's life will be spent in leisure  
With Social Security passage in 1935 set retirement at 65



### **Income Resources**

Social Security 37% (OASDI)  
Pensions 18%  
Asset income 15%  
Earnings 28%  
"Other" 2%

### **Maxillofacial Environment**

Skin lesions/cancer/therapies?  
TMJ/MOM  
Mucosal lesions – oral cancer  
Periodontal condition – PS/GS  
Dental condition  
Occlusal conditions  
Prosthesis (type, function, condition, use and maintenance)

### **Chief Complaint/Concern**

It is important to compose this word for word  
An excellent starting point  
Stay in the question(s)  
Generally always return to prevention  
Functional vs. Dysfunctional occlusion  
    Subjective  
    Objective  
Never make a patient "worse" than when they presented

### **Risk Assessment**

Informed Consent/Education  
Doctor means \_\_\_\_\_.  
Education – L. educare "draw forth"  
This relates to:  
    "Every patient carries his own doctor inside."  
    Albert Schweitzer 1875-1965

### **Diagnosis and Treatment Planning**

Systemic  
Emergency  
Palliative  
Preventive  
Preparatory (periodontal, caries control and etiology determination)  
HOLDING/Educational PHASE – days/months/years  
Restorative + Dx wax-up/work-up  
Prosthetic rehabilitation  
Maintenance  
*Not a continuous process necessarily*



### **Patient “Fitness” for Treatment**

Cognitive status  
 (delirium, dementia, depression, other)  
 Level of cooperation  
     Actively cooperative  
     Passively cooperative  
     Actively uncooperative  
     Passively uncooperative  
 Level of coordination  
 Level of physical function  
 Diet (regular, soft, non-chew, pureed, full liquid, PEG)  
 Esthetic concerns (family and patient)  
 Level of oral hygiene/diet etc (Preventive status)  
 Prognosis and capacity for change (caregiver ed vs patient)

### **Treatment**

Patient interests/goals  
 PREVENTIVE STATUS (PS/GS/knowledge)  
 Xerostomia/Saliva – 1-2cc/min (2L/d)  
 DietCandy, cough drops, processed carbs  
 Fluoride

### **Oral hygiene**

    Tooth brush technique  
     Interproximal cleaning  
     Tongue/gingival hygiene  
     The “Why” is important!

### **Saliva!**

### **SALIVA!**

Bicarbonate  
 Agglutination  
 IgA  
 Calcium, Phosphate, fluoride (ENAMEL)  
 Lactoferrin  
 Amylase  
 Statherin  
 Sialin  
 Lysozyme

### **DIET**

Carbohydrate Discipline  
 Insults should be brief and spaced far apart  
 Diet Diary  
 Informed consent  
 Stephen curves and pH  
 Xerostomia – incendiary!

### **Fluoride**

Lethal dose – 4.5grams (30-60mg/kg)  
 5-15mg/kg – remedies (70kg -350mg-1050mg)  
 Optimal dose 1-2mg/d  
 Drinking water 0.7-1.2ppm = 0.7-1.2mg/L  
 (.03mg/oz)  
 Max Allowable (4ppm)  
 ½ life Fluoride – 70weeks  
 Tube of OTC (6.5oz): ~190mg F (0.75mg)  
 Tube of Rx 1.8oz (5000ppm) 255mg (3.75mg)  
 Varnish (3-6mg F per dose)

<http://www.cdc.gov/fluoridation/faqs/>

### **Oral Hygiene**

Bass Technique  
 Charters  
 Powered Brushes  
     Cognitively impaired  
 Mouth props  
 Encouragement and realistic treatment goals  
 Be a “public health” dental team!