



Seminario del Venerdì'
22 Gennaio 2010

I principali problemi di odontoiatria geriatrica

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EPIDEMIOLOGIA DELLO STATO DI SALUTE DEL CAVO ORALE IN GERIATRIA

**Studio epidemiologico:
Università di Milano nel 2002
364 pazienti (258 ospedalizzati e 106 non ospedalizzati)
età > 65 anni.**

Evidenza che:

**il 49,6% degli anziani istituzionalizzati è affetto da edentulia
il 28,3% degli anziani non istituzionalizzati è affetto da edentulia**

**Gli anziani ospedalizzati dispongono di 3,95 denti rimanenti;
Gli anziani non ospedalizzati dispongono di 10 denti rimanenti;**

**La patologia cariosa è presente nel 45,28% dei pazienti non ospedalizzati;
Il 32,07% ha necessità di cure dentarie**

(Strohmenger, Giornale di Gerontologia 2006)

**Indagine epidemiologica
Stato di salute in anziani in Regione Toscana:**

Età media degli anziani 76,7 anni (73,9 anni per i residenti a domicilio e 83,7 anni per quelli residenti in Rsa);

Denti rimanenti: 5,8 per gli anziani istituzionalizzati e 7,7 per gli anziani a domicilio;

Il 56% degli anziani istituzionalizzati risultava edentulo, il 22% in quelli a domicilio;

Il 29,6% del campione presentava lesioni mucosa, di queste 122 a carattere infiammatorio e 3 di natura incerta.

(Perra C. et al Geriatria, 2006)

Studio epidemiologico Salute cavo orale di anziani istituzionalizzati Asl 8 Regione Piemonte.

Campione: 190 anziani

Risultati:

14% indipendenti in tutte le funzioni ADL;

12% dipendente in una funzione ADL;

29% dipendente in tutte le funzioni;

70% è affetto da decadimento cognitivo di diverso grado;

52% completamente edentulo;

13% lamentano dolore o presentano infezioni

Valutazione salute orale percepita (GOHAI): il 46% degli edentuli o protesi non adeguata esprimeva giudizio negativo, il 39% nel gruppo protesi adeguata.

(Bellini S. Cooperazione odontoiatrica Internazionale)

Gerodontology. 2000 Jul;17(1):33-8.

Oral health care among nursing home residents in Avon.

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OBJECTIVE: To assess personal oral health care standards among frail, elderly and infirm nursing home residents prior to developing and evaluating a health promotion intervention.

DESIGN: Descriptive survey, interview and clinical data. **SETTING:** 22 randomly selected nursing homes in the Bristol area. **METHOD:** 412 residents with denture(s) and/or natural teeth, and giving informed consent to the study were interviewed about dental attendance and current dental problems. A clinical examination assessed levels of oral and denture hygiene, denture-related stomatitis, gingivitis, calculus and root caries. **RESULTS:** Less than half the subjects (mean age 84.5 years) were ambulant. **Over 70% had not seen a dentist for over 5 years, and 22% reported a current dental problem.** Among denture wearers, **82% were unable to clean their dentures;** staff cleaned dentures for 64%. **Denture-related stomatitis affected 33%, and unhygienic dentures were worn by 95% of subjects.** Among dentate subjects (**mean number of teeth 11.6**), **75% were unable to clean their teeth** yet none received regular assistance. On average, two-thirds of each tooth surface were covered in plaque. Gingivitis was moderately severe. Calculus was present in 82% of subjects and **root caries in 63% of subjects.** **CONCLUSIONS:** Most residents required help with oral health care but many did not receive it. Residents' levels of plaque and associated dental disease were high. Staff did not effectively perform oral health care appropriate to residents' needs. Further research to evaluate an oral health care training programme for care staff is planned

Community Dent Health. 2008 Dec;25(4):231-6.

Oral health problems and needs in nursing home residents in Northern Italy.

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OBJECTIVE: To describe the oral health status and treatment needs of a sample of elderly people residing **in nursing homes in Northern Italy.**

RESEARCH DESIGN: a sample of 595 elderly residents (mean age 83.2+/-9.2 yrs), with adequate cognitive skills were examined by six calibrated dentists. **RESULTS:** The sample (82% women) was divided into two groups: **edentulous (43%) and dentate.** In the edentulous group **58% wore dentures in both jaws, 8% in only one jaw and 34% had no dentures.** The main problems were **dirty or loose dentures and poor oral hygiene.** In the dentate group the mean number of teeth was **8.4+/-7.4, 53% wore dentures (removable, fixed or a combination).** **Poor oral hygiene was found in 86%, root caries in 51% and coronal caries in 46%.** Their main needs were professional cleaning (72%), oral hygiene instructions (62%) and tooth/root extractions (56%). While normative needs were noted for 82% of the whole sample, oral treatment needs were accurately perceived by only 20% of residents, poorly by 24%, **while 46% indicated that they had no oral treatment needs.**

J Am Geriatr Soc. 1997 Nov;45(11):1315-23.

Dental status, quality of life, and mortality in an older community population: a multivariate approach.

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OBJECTIVE: To evaluate the relationships between a functional measure of dental status (FDS), several variables belonging to a quality of life (QOL) profile, and mortality in an older community population.

DESIGN: Cross-sectional analysis for FDS and QOL; 10-year prospective study for mortality. **SETTING:** The historical and central district of the city of Brescia, northern Italy. **PARTICIPANTS:** The entire cohort

of 70 to 75-year-old people living in the above-mentioned district (n = 1303): 1201 subjects were eligible for interview at baseline; 11 refused the physical examination; 52 were lost to follow-up; data are

presented for the remaining sample of 1137 subjects. **MEASUREMENTS:** FDS examination was used to classify the subjects into three groups: **naturally adequate (ADS) (25.2%), naturally inadequate (IDS) (14.3%) dental status, and denture wearers (DW) (60.4%).** Various QOL domains were assessed: mood

level, cognitive status, instrumental activities of daily living (IADL), social relationships, indexes of somatic health, and health behaviors. The demographic and socioeconomic parameters were used as

covariates. **RESULTS:** Univariate analysis showed that both the ADS and the DW groups had a better QOL profile than the IDS group. Multiple logistic regression indicated that ADS and DW conditions were

predicted independently by better educational and financial conditions, higher social relationships and a better IADL level in comparison with IDS. Moreover, compared with IDS, DS was a significant predictor of

a better level at the SELF, IADL, and HCU scales whereas DW predicted only a better IADL level. Crude survival analysis showed that ADS was associated with a lower mortality risk compared with both DW and

IDS, which did not differ from each other. FDS also remained a significant and independent predictor of mortality in a more general Cox's regression model. **CONCLUSIONS:** Within this cohort of 70 to 75-year-

old urban residents, FDS is associated with several QOL domains and with long-term survival. A hierarchy of reciprocal relationships exists among these parameters. The present study provides a basis for

encouraging more extensive use of dentures. Longitudinal studies using oral health outcomes are warranted before clinical recommendations can be made.

PROBLEMI ODONTOIATRICI IN GERIATRIA

J Adv Nurs. 2005 Nov;52(4):410-9.

Oral hygiene care for residents with dementia: a literature review.

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AIM: This paper presents a literature review of oral hygiene care for adults with dementia in residential aged care facilities, including evidence for: (1) prevalence, incidence, experiences and increments of oral diseases; (2) use of assessment tools to evaluate residents' oral health; (3) preventive oral hygiene care strategies; and (4) provision of dental treatment. **BACKGROUND:** The impact of dementia on residential care is ever-increasing and regular oral hygiene care provision is challenging for cognitively impaired residents. Although an abundance of oral hygiene care recommendations for older people have been published, the supporting evidence has not been clearly delineated. **METHODS:** A review was conducted of English language publications (1980-2002), using a two-step approach (keyword electronic database search, supplemented with secondary search of cited references). All 306 selected articles were critically reviewed and systematically categorized. **RESULTS:** **Evidence confirmed clinicians' observations of poor oral health in older residents with dementia. Possible risk factors identified were: salivary dysfunction, polypharmacy, medical conditions, swallowing and dietary problems, functional dependence, oral hygiene care assistance and poor use of dental care. One comprehensive, reliable and validated oral assessment screening tool for residents with dementia had been published.** Expert opinion indicated that oral assessment screening by staff and a dentist would be ideal at admission and regularly thereafter. Clinicians and researchers suggested that oral hygiene care strategies were effective in preventing oral diseases and appropriate for residents with dementia. **CONCLUSION:** These literature review findings supported the use of oral assessment screening tools by staff and efficacious preventive oral hygiene care strategies/products for adults with dementia in residential care facilities. Further research with this population is needed to develop and validate oral assessment tools and staff education programmes, trial preventive oral hygiene care strategies/products and trial dementia-focused behaviour management and communication strategies

MALATTIA PARODONTALE

diffusa tra gli anziani

Il parodonto è la struttura di supporto dei denti

La parodontite è l'infiammazione dell'apparato dento-parodontale la cui eziopatogenesi è su base infettivo-infiammatoria

fattori sistemici che condizionano l'evoluzione: diabete mellito, osteoporosi.

la placca determina la progressiva perdita dell'attacco parodontale

La malattia parodontale favorisce la perdita di osso e successivamente dei denti.

LA PLACCA BATTERICA È COSTITUITA:

75% da microrganismi

20% di sostanze organiche derivati da alimenti (carboidrati e lipidi) e Sali minerali (calcio, fosforo)

il 5% vari tipi di cellule (epiteliali, leucociti, macrofagi) e acqua.

I tempi di formazione della placca sono:

Prima di 8 ore non è ancora formata ed è facilmente asportabile.

Dopo 8 ore si associa alla matrice intermicrobica che favorisce il deposito di batteri e l'adesione alla superficie dentale.

Dopo 24 ore è visibile ad occhio nudo depositi solidi calcificati e adesi alla parete dei denti, gengiva e tasche parodontali.

XEROSTOMIA

Marcata secchezza del cavo orale legata alla netta riduzione della produzione di saliva.



















COMPLICANZE DEI PROBLEMI ODONTOIATRICI SULLA SALUTE DEGLI ANZIANI FRAGILI

Age Ageing. 1999 Sep;28(5):463-8.

Relationship between oral health and nutrition in very old people.

[Mojon P](#), [Budtz-Jørgensen E](#), [Rapin CH](#).

Division of Gerodontology and Removable Prosthodontics, University of Geneva, Switzerland.

OBJECTIVE: To evaluate the relationship between oral health status and nutritional deficiency. **SUBJECTS:** 324 institutionalized frail older adults (mean age 85).

MEASUREMENTS: Structured oral examination including an evaluation of mucosa, periodontal state, caries prevalence and denture quality. The nutritional status was assessed using serum albumin concentration and the body mass index. Physical dependence was assessed using the Barthel index. To identify oral health disorders associated with markers of malnutrition we performed the Pearson chi2 test separately for edentulous and dentate patients. Subjects with at least one of the identified oral disorders were classified as having compromised oral functional status. **RESULTS:** **About two-thirds of the subjects were functionally dependent and half had either a body mass index <21 kg/m2 or serum albumin <33 g/l.** Among the edentulous, wearing dentures with defective bases or not wearing dentures at all were the factors most associated with malnutrition. In dentate subjects, corresponding identifiers were the number of occluding pairs of teeth (five or fewer, either natural or prosthetic), the number of retained roots (four or more), and the presence of mobile teeth. According to these criteria, 31% of the subjects had a compromised oral functional status. This was more frequently found in dependent subjects (37%) than semi-dependent subjects (18%; odds ratio, 2.6; 95% confidence interval, 1.4-4.8). **Those with compromised oral functional status had a significantly lower body mass index and serum albumin concentration.** **CONCLUSION:** Specific detrimental oral conditions are associated with nutritional deficiency in very old people.

Associations between periodontal disease and risk for atherosclerosis, cardiovascular disease, and stroke. A systematic review.

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FOCUSED QUESTION: Does periodontal disease influence the

initiation/progression of atherosclerosis and, therefore, cardiovascular disease (CVD), stroke, and peripheral vascular disease (PVD)? **SEARCH PROTOCOL:**

MEDLINE, pre-MEDLINE, MEDLINE Daily Update, and the Cochrane Controlled

Trials. **DATA COLLECTION AND ANALYSIS:** Because the studies used different oral assessment measures, it was not possible to perform a meta-analysis of the

data reported. Weighted mean differences, relative risks, or odds ratios were compared for cohort studies. **MAIN RESULTS:** 1. Of the initial 1,526 studies

identified, 31 (including 8 case-control and 18 cross-sectional reports) were

included in the analysis. Taken together, most of the literature supports a modest association between periodontal disease and atherosclerosis. However, data

reported in several studies do not show this association. 2. The absence of a

standard definition and measures for periodontal disease complicates

interpretation of results, as do potential confounding risk factors common to both conditions. **REVIEWERS' CONCLUSIONS:** 1. **Periodontal disease may be modestly**

associated with atherosclerosis, MI, and CVD. 2. Additional large-scale

longitudinal epidemiologic and intervention studies are necessary to validate this association and to determine causality.

Studio INVEST (oralinfections and Vascolar Disease Epidemiological Study)

Lo studio condotto in una popolazione residente a New York con età superiore a 55 anni.

I primi dati dello studio confermano la correlazione tra infezioni orali e aterosclerosi carotidea ed infarto.

La perdita di 10-19 denti è associata ad un aumento della prevalenza di placche ateromatose in un modello corretto per i principali fattori di rischio noti per l'insorgenza delle placche.

I meccanismi:

Diretti: batteri patogeni parodontali attraverso la migrazione dal cavo orale al sistema circolatorio

Indiretti: produzione locale di mediatori dell'infiammazione che potrebbero entrare in circolo

Chest. 2004 Nov;126(5):1575-82.

Colonization of dental plaques: a reservoir of respiratory pathogens for hospital-acquired pneumonia in institutionalized elders.

[El-Solh AA](#), [Pietrantonio C](#), [Bhat A](#), [Okada M](#), [Zambon J](#), [Aquilina A](#), [Berbary E](#).

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STUDY OBJECTIVES: Poor dental hygiene has been linked to respiratory pathogen colonization in residents of long-term care facilities. We sought to **investigate the association between dental plaque (DP) colonization and lower respiratory tract infection in hospitalized institutionalized elders** using molecular genotyping. **MEASUREMENTS AND RESULTS:** Twenty-eight subjects (57%) had colonization of their DPs with aerobic pathogens. Staphylococcus aureus (45%) accounted for the majority of the isolates, followed by enteric Gram-negative bacilli (42%) and Pseudomonas aeruginosa (13%). The etiology of HAP was documented in 10 patients. Of the 13 isolates recovered from PBAL fluid, nine respiratory pathogens matched genetically those recovered from the corresponding DPs of eight patients. **CONCLUSIONS:** **These findings suggest that aerobic respiratory pathogens colonizing DPs may be an important reservoir for HAP in institutionalized elders.** Future studies are needed to delineate whether daily oral hygiene in hospitalized elderly would reduce the risk of nosocomial pneumonia in this frail population.

BACKGROUND: The purpose of this review was to investigate evidence for a possible etiological association between oral health and pneumonia or other respiratory diseases. **RESULTS:** A total of 728 articles were searched for

relevancy, determined by article title, abstract, and full copy, resulting in a yield of 19 studies that met our inclusion criteria. These articles were read and scored

independently by the reviewers to obtain the evidence for this review: **1) the**

potential risk factors for pneumonia were identified as the presence of cariogenic and periodontal pathogens, dental decay, and poor oral hygiene in five studies; 2)

a weak association between periodontal disease and chronic obstructive

pulmonary disease (COPD) was identified in four poor to fair studies; and 3) 10

studies were retained providing evidence that interventions aiming to improve

oral health reduced the progression or occurrence of pneumonia. CONCLUSIONS:

1) There is fair evidence (II-2, grade B recommendation) of an association of

pneumonia with oral health (odds ratio [OR]=1.2 to 9.6 depending on oral health indicators). 2) There is poor evidence of a weak association (OR<2.0) between

COPD and oral health (II-2/3, grade C recommendation). 3) There is good evidence

(I, grade A recommendation) that improved oral hygiene and frequent professional oral health care reduces the progression or occurrence of respiratory diseases

among high-risk elderly adults living in nursing homes and especially those in intensive care units (ICUs) (number needed to treat [NNT]=2 to 16; relative risk

reduction [RRR]=34% to 83%).

J Am Geriatr Soc. 2008 Sep;56(9):1601-7. Epub 2008 Aug 4.
Modification of the risk of mortality from pneumonia with oral hygiene care.

[Bassim CW](#), [Gibson G](#), [Ward T](#), [Paphides BM](#), [Denucci DJ](#).

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OBJECTIVES: To investigate the associations between the assignment of an oral hygiene aide staff member and risk factors for mortality from pneumonia in a nursing home and to test the hypothesis that this care would affect the incidence of mortality from pneumonia. **RESULTS:** Initially, the group that received oral care, an older and less functionally able group, showed approximately the same incidence of mortality from pneumonia as the group that did not receive oral care, but when the data were adjusted for the risk factors found to be significant for mortality from pneumonia, the odds of dying from pneumonia in the group that did not receive oral care was more than three times that of the group that did receive oral care (odds ratio=3.57, P=.03). Modified risk factors included age, functionality, cognitive function, and clinical concern about aspiration pneumonia. **CONCLUSION:** Oral hygiene nursing aide intervention may be an efficient risk factor modifier of mortality from nursing home-associated pneumonia.

Arch Gerontol Geriatr. 2008 Sep-Oct;47(2):267-75. Epub 2007 Oct 25.

Tongue-coating as risk indicator for aspiration pneumonia in edentate elderly.

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Silent aspiration of oral microorganisms is a major cause of aspiration pneumonia. To establish oral hygiene criteria for the prevention of aspiration pneumonia in edentulous elderly persons, we investigated the relationship between presence of tongue-coating and number of oral bacteria in saliva and episodes of pneumonia. A total of 71 edentulous Japanese people aged 65 years or older living in nursing homes were enrolled in the study. A tongue plaque index (TPI) was used to evaluate quantity of tongue-coating, with TPI0 signifying no tongue-coating and TPI1 signifying presence of tongue-coating. Edentate elderly with TPI1 demonstrated significantly higher salivary bacterial counts than those with TPI0 ($p < 0.05$). The number of elderly patients developing aspiration pneumonia was larger ($p < 0.005$) in patients with TPI-based poor scores (average $TPI > 0.5$) than in those with TPI-based good scores. The relative risk of developing pneumonia in the good tongue hygiene group compared with in the poor tongue hygiene group was 0.12, 95% confidence interval (CI): 0.02-0.9. The results demonstrate that tongue-coating is associated with number of viable salivary bacterial cells and development of aspiration pneumonia, suggesting that tongue-coating is a risk indicator of aspiration pneumonia in edentate subjects.

Gerodontology. 2007 Jun;24(2):117-20.

Denture loss: an 8-month study in a community dental setting.

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OBJECTIVE: Lost dentures can be a frustrating scenario for both patients and clinicians. This study aimed to find out where dentures were being lost and the level of assistance patients received with denture care.

RESULTS: The results showed most dentures were lost in the hospital environment, and in many cases patients were not provided with pots in which to store their dentures or offered help or advice on denture care. The provision of new dentures to this patient group is complicated by the fact that in many cases the dentures were over ten years old and many of the patients were over eighty five years old. This makes adaptation to new dentures difficult.

CONCLUSIONS: **It is imperative that protocols are developed and staff trained to minimise the risk of lost dentures and improve the standard of denture care.**

**INTERVENTI PREVENTIVI E
CURATIVI DEI PROBLEMI
ODONTOIATRICI NELL'ANZIANO
FRAGILE**

**J Am Geriatr Soc. 2001 Feb;49(2):229-30.
Oral health and the role of the geriatrician.
Shenkin JD, Baum BJ.**

Geriatricians, as primary care providers, should be aware of their patients' dental condition and consider it in their management plans, especially for patients in institutional settings and those with significant medical compromise.

PROTOCOLLI IGIENE DEL CAVO ORALE

Controllare il cavo orale nei suoi componenti

Lavare e spazzolare i denti e dentiere secondo le corrette indicazioni

Usare dentifrici e colluttori al fluoro

Usare disinfettanti non alcoolici a base di clorexidina

Pianificare interventi di detartrasi periodica

Pianificare interventi di cura delle carie e parodontosi

Pianificare la bonifica delle radici cariose (avulsione)

**Attivare interventi riabilitativi odontoiatrici attraverso confezionamento di:
protesi totali mobili o fisse
protesi parziali mobile o fisse**

Controllo odontoiatrico periodico

Colluttori

soluzione a base di clorexidina gluconato con azione antimicrobica per stomatiti.

soluzione a base di bicarbonato per tamponare l'acidità e dissolvono la placca.

Effect of amine fluoride-stannous fluoride preparations on oral yeasts in the elderly: a randomised placebo-controlled trial.

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Department of Oral and Maxillofacial Diseases, Helsinki University Central Hospital, Helsinki, Finland.

OBJECTIVES: Oral yeast infections are an emerging problem among medically compromised and frail elderly. Antifungal drug resistance is also increasing because of an increase in non-albicans *Candida* strains in these populations. We therefore set out to study, in the randomised-controlled trial setting if the **use of a topical amine fluoride-stannous fluoride combination (AmF-SnF₂) could control oral *Candida* growth in the elderly.**

The hypothesis was based on earlier findings showing that in vitro this combination had antifungal efficacy. **METHODS:** A total of 194 nursing home residents were randomised to receive either the test mouth rinse and toothpaste or a placebo twice daily for 8 months. Of these, 136 completed the trial. Saliva samples were taken using the oral rinse method, cultivated and the strain level identified with routine microbial methods. Compliance and use of preparations was assessed by a nurse. **RESULTS:** Significantly at the end of the trial, less mucosal lesions were observed in the test group in comparison to controls. Total bacterial count decreased in both the groups during the trial. *Candida albicans* was the most prevalent strain detected both at baseline and 8 months later. Only a few subjects carried non-albicans strains. The AmF-SnF₂ did not significantly affect mean oral *Candida* counts, but median *Candida* counts were reduced in the AmF-SnF₂ group while an increase was seen in the placebo group. However, the differences observed were not statistically significant. Compliance among the regular elderly users slightly increased during the trial for both the groups. **CONCLUSION:** The number of subjects with high *Candida* counts decreased in the AmF-SnF₂ group. **Hence, the fluoride combination might be useful as a support therapy for oral candidiasis.** Prevalence of non-albicans *Candida* strains was low in this population



Gerodontology. 2007 Jun;24(2):98-104.

Buffering effect of a prophylactic gel on dental plaque in institutionalised elderly.

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OBJECTIVES: The effect of multiple daily applications of a prophylactic gel, with buffering substances, on plaque acidogenicity in elderly institutionalised individuals was evaluated.

BACKGROUND: Many elderly suffer from reduced salivary flow, poor oral hygiene and increased levels of cariogenic bacteria and are considered to be at an increased risk for coronal and root caries. Reinforcing the buffering capacity of dental plaque by the addition of substances such as bicarbonate and phosphates may decrease their caries activity.

MATERIALS AND METHODS: Fourteen elderly, with subjective dry mouth, were treated for 16-day-periods at random with: (i) Profylin fluoride gel with buffering components; (ii) **Profylin fluoride gel without buffering components and (iii) rinsing with water.** The plaque pH was registered after a carbohydrate challenge and the following were recorded before and after each test period: stimulated salivary secretion rate, buffer capacity, number Colony Forming Units (CFU) mutans streptococci, lactobacilli and a sample of *Candida albicans* on oral mucosa. **RESULTS:** Eleven participants (**mean age 76.6 years**) fulfilled the study. A tendency to a higher plaque acidogenicity and amount of cariogenic microorganisms was found after the gel treatments. *C. albicans* was found in low levels. **CONCLUSION:** **Frequent applications of the gel did not result in an improved neutralising effect in the elderly.** This may be caused by a combination of several factors, such as the level of oral dryness of the individuals and low solubility, release and retention of the gel substances in plaque. Instead, an increased plaque acidogenicity was noted.

Geriatr Nurs. 2009 Sep-Oct;30(5):329-33. Epub 2009 Aug 13.

Dental hygiene education for nursing staff.

[Kullberg E](#), [Forsell M](#), [Wedel P](#), [Sjögren P](#), [Johansson O](#), [Herbst B](#), [Hoogstraate J](#).

Oral Care AB, Stockholm, Sweden.

The aim of this study was to describe a new dental hygiene education program for nursing staff and to report experiences from the program at a nursing home in Stockholm, Sweden (2006). This strategy comprises 3 steps. **The first is individual instruction for nursing staff about oral care for patients and hands-on training in toothbrushing technique using an electric toothbrush. The second step was small discussion groups of 4 to 8 nursing staff, led by a dental hygienist and a psychologist. The third step was a theoretical lecture focusing on the associations among dental hygiene, oral health, and general health among the elderly.** During the dental hygiene education program, a negative attitude toward oral care was noted among members of the nursing staff, although they did consider oral care important for their patients. Increased self-confidence of staff in providing oral care was noted after completing the dental hygiene education program. Nursing staff members stated that they had received more detailed knowledge about oral care during the program. This dental hygiene education program appears to result in increased knowledge and interest in oral hygiene tasks among the nursing staff and may lead to improved dental hygiene among nursing home residents.

Am Med Dir Assoc. 2009 Nov;10(9):658-61. Epub 2009 Oct 12.
Nursing education and improvement in oral care delivery in long-term care.

[Gammack JK](#), [Pulisetty S](#).

Division of Geriatric Medicine, Saint Louis University School of Medicine, St. Louis, MO, USA.

OBJECTIVE: To determine if a facility-wide oral care educational program will improve the quality of routine oral care provided to nursing home residents.

DESIGN: Single-blind, pre-post observational study of direct caregivers providing routine oral care to residents in 2 nursing homes. **RESULTS:** Twenty-eight subjects were observed during 110 pre- and 119 posteducation oral care encounters. One third of the subjects attended the facility-wide oral education program. Most facility residents were cooperative during oral care delivery. **The average length of brushing to the teeth or dentures was 52 seconds and total time for oral care delivery was 2 minutes after the educational program.** Approximately half of the residents received tooth or denture care with both toothbrush and paste, half had tongue cleansing performed and half received oral rinsing with water. One resident received flossing of the teeth. One third of the oral care encounters were performed without the use of gloves. **There were no significant changes in any oral care activities after the educational intervention.**

CONCLUSION: The oral care educational program did not result in improvement in the delivery of routine oral care to nursing home residents.

OBJECTIVES: To test intervention protocols for feasibility, staff adherence, and effectiveness in reducing pneumonia risk factors (impaired oral hygiene, swallowing difficulty) in nursing home residents. **DESIGN:** Prospective study. **SETTING:** Two nursing homes. **PARTICIPANTS:** Fifty-two nursing home residents. **INTERVENTION:** Thirty residents with impaired oral hygiene were randomly assigned to manual oral brushing plus 0.12% chlorhexidine oral rinse at different frequencies daily. Twenty-two residents with swallowing difficulty were randomly assigned to upright feeding positioning, teaching swallowing techniques, or manual oral brushing. All protocols were administered over 3 months. **MEASUREMENTS:** Feasibility was assessed monthly and defined as high if the protocol took less than 10 minutes to administer. Adherence was assessed weekly and defined as high if full staff adherence was demonstrated in more than 75% of assessments. Effectiveness for improved oral hygiene (reduction in oral plaque score) and swallowing (reduction in cough during swallowing) was compared at baseline and 3 months. **RESULTS:** Daily manual oral brushing plus 0.12% chlorhexidine rinse demonstrated high feasibility, high staff adherence, and effectiveness in improving oral hygiene ($P < .001$ vs baseline); this combination administered twice per day showed the highest plaque score reduction. Daily manual oral brushing and upright feeding positioning demonstrated high feasibility, high staff adherence, and effectiveness in improving swallowing. **CONCLUSION:** Manual oral brushing, 0.12% chlorhexidine oral rinse, and upright feeding positioning demonstrated high feasibility, high staff adherence, and effectiveness in pneumonia risk factor reduction. A protocol combining these components warrants testing for its ability to reduce pneumonia in nursing home residents

BACKGROUND: Intensive oral care can reduce the incidence of pneumonia in elderly nursing home patients, but the mechanism is unknown. **OBJECTIVE:** To explore the effects of intensive oral care on impaired cough reflex sensitivity, which is a known risk factor of aspiration pneumonia. **METHODS:** Cough reflex sensitivity to citric acid was measured in elderly nursing home patients, who were randomly assigned to the intervention group (n = 30) and the control group (n = 29). The patients in the intervention group had their teeth and gingiva cleaned by caregivers after every meal for 1 month. The patients in the control group performed their own oral care during the same period. Serum substance P (SP) concentration, cognitive function, and activities of daily living (ADL) were also assessed. **RESULTS:** In the intervention group, cough reflex sensitivity at 30 days showed significantly higher sensitivity than baseline ($p < 0.01$). At 30 days, the cough reflex sensitivities in the intervention group were significantly higher than that of the control group ($p < 0.05$). Compared with the control group, the odds ratio of improvement of cough reflex sensitivity was 5.3 (95% confidence interval, 1.7 to 16.0; $p < 0.005$) for the intervention group. One month of intensive oral care did not have a significant effect on serum SP concentration, cognitive function, and ADL. **CONCLUSION:** Intensive oral care may reduce the incidence of pneumonia by improving cough reflex sensitivity in elderly nursing home patients.

Int J Dent Hyg. 2007 May;5(2):69-74.

Professional oral health care by dental hygienists reduced respiratory infections in elderly persons requiring nursing care.

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OBJECTIVES: Respiratory infection is a major cause of death in the elderly. We have evaluated the role of professional oral health care (POHC) by **dental hygienists** in reducing respiratory infections in elderly persons requiring nursing care. **METHODS:** Two populations of elderly persons, one receiving POHC and one not, were examined to determine numbers of microorganisms, potent pathogens of respiratory infection, enzymatic activity in saliva, fevers, prevalence of fatal aspiration pneumonia and prevalence of influenza. **RESULTS:** In the first population, we found a high prevalence of potent respiratory pathogens such as Staphylococcus species, Pseudomonas aeruginosa and Candida albicans. Patients who received POHC showed a lower prevalence for these pathogens than those who did not. **The ratio of fatal aspiration pneumonia in POHC patients was significantly lower than that in patients without POHC (non-POHC) over a 24-month period ($P < 0.05$). The prevalence of a fever of 37.8 degrees C or more in POHC patients was significantly lower than that in the non-POHC group ($P < 0.05$).** **CONCLUSION:** These results suggest that POHC by dental hygienists is effective in preventing respiratory infections in elderly persons requiring nursing care.

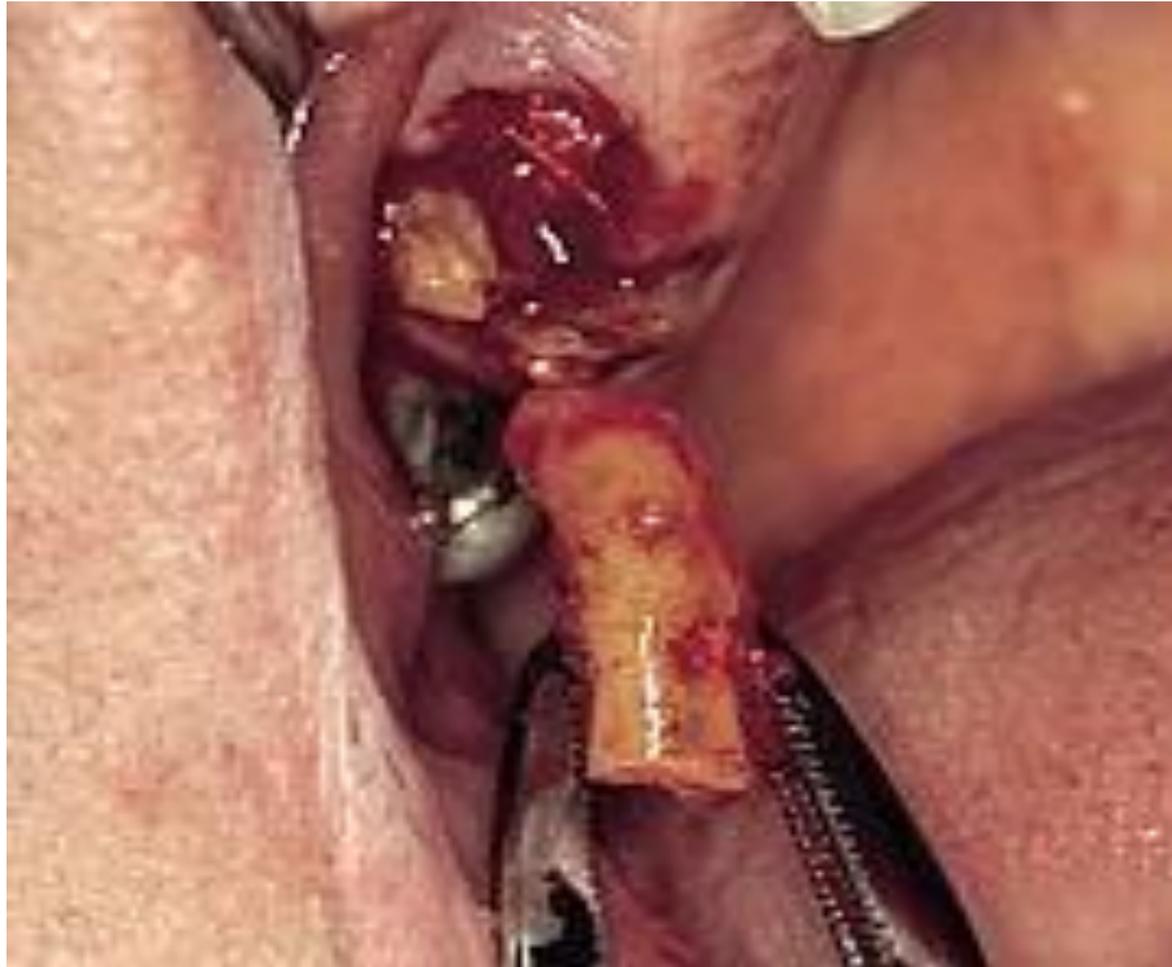
Oral health and oral implant status in edentulous patients with implant-supported dental prostheses who are receiving long-term nursing care.

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AIM: The aim of this study was **to investigate oral health and oral implant status in a group of edentulous patients receiving long-term residential or nursing care (LTC), all of whom had implant-supported fixed or removable dental prostheses.** **MATERIAL AND METHODS:** A dental examination was performed on a total of 3310 patients receiving LTC and from this population 35 edentulous patients in whom dental implants had been placed formed the cohort for this study. Any problems with the implant-supported prosthesis, implant mobility or other complications were also assessed. In addition, patients were asked about any oral symptoms and their usual oral hygiene procedures. **RESULTS:** About half of the subjects (17/35) were registered as having no/mild inflammation with 18 of 35 having moderate/severe inflammation. Twelve of the 35 patients had good/acceptable oral hygiene and 23 of 35 had poor/bad oral hygiene. Twenty-one of the 35 patients depended on help from the nursing personnel for their daily oral hygiene procedures. Obvious problems with food impaction were noted in 11 patients. A total of 229 implants had been placed in 43 jaws supporting 40 full arch-fixed prostheses and three implant-borne overdentures. There was no evidence of mobility or fractures of either the implants or the prostheses. Fifteen implants showed some exposed screw threads. Pus was exuding from one implant site and general peri-implant gingival hyperplasia was noted in two patients. Twenty-four patients were completely satisfied with the function and appearance of their implant-supported prostheses. Two patients were totally dissatisfied. **CONCLUSION:** **This study indicates that oral implant therapy can be considered as a treatment of choice in elderly patients, even if oral hygiene is sub-optimal.**







J Dent Res. 2008 Jun;87(6):594-8.

Professional oral health care reduces the number of oropharyngeal bacteria.

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Silent aspiration of oropharyngeal pathogenic organisms is a significant risk factor causing pneumonia in the elderly. We hypothesized that regular oral hygiene care will affect the presence of oropharyngeal bacteria. Professional cleaning of the oral cavity and/or the gargling of a disinfectant liquid solution was performed over a five-month period in three facilities for the dependent elderly. Total oropharyngeal bacteria, streptococci, staphylococci, Candida, Pseudomonas, and black-pigmented Bacteroides species were monitored. The levels of these oropharyngeal bacteria decreased or disappeared after weekly professional oral health care, i.e., cleaning of teeth, dentures, tongue, and oral mucous membrane by dental hygienists. After lunch, gargling with povidone iodine was shown to be less effective than professional oral care. These findings indicate that weekly professional mechanical cleaning of the oral cavity, rather than a daily chemical disinfection of the mouth, can be an important strategy to prevent aspiration pneumonia in the dependent elderly.