

## **DENTAL EPIDEMIOLOGY IN JERSEY 1987 - 2003**

### **1. BACKGROUND**

#### **SCHOOL-AGED CHILDREN**

- q 1987 first, one-off survey by Birmingham University Dental School. Examined a sample of 5,12 and 14 year olds.
- q Since 1997 Jersey has participated in an annual programme of surveys as performed in UK
- q British Association for the Study of Community Dentistry (BASCD) co-ordinates an annual rolling programme of surveys of schoolchildren in the UK and reports on dental health
- q Examiners are trained and standardised by BASCD so that results are comparable between geographical areas across the UK. Since 1997, Jersey surveys have been conducted within the guidelines of the BASCD protocol and have been performed by a dentist calibrated with others in the UK.
- q Key ages are examined on a four-year cycle; 5,12,5,14 and so on. Jersey has added a junior age group alongside the 5's in 2000 and 2002 to give a broader picture for local planning purposes
- q Indicators of dental health in school-aged children are based upon the prevalence of dental decay i.e. the population average number of teeth decayed (dt), missing due to decay (mt), and filled (ft) and the proportion of children experiencing these conditions
- q The results produce not only an overall picture of Jersey's dental health, but can be analysed to provide more detailed local measurements
- q Surveys are performed in schools, as they represent a convenient "captive" population. Schools can be attributed a dmft "score" as a measure of their collective dental health. Trends over time can be monitored, as can changes effected by the introduction of preventive and oral health promotion initiatives delivered within the schools.
- q Dental disease prevalence can also be mapped geographically using postcode information
- q In addition, Jersey surveys have included investigations of gum health, deposits on the teeth, orthodontics, enamel defects, dental attendance, the Jersey Dental Fitness Scheme, Fluoride supplements, diet, beliefs and attitudes relating to dentistry and dental health

#### **OLDER AND ELDERLY RESIDENTS – AGED 65 AND OVER**

- q A one-off study in 2001 for specific purposes – to discover more about the dental health of senior residents of Jersey and to gather baseline information before the introduction of a new dental treatment subsidy scheme
- q Randomly chosen sample of free-living people aged 65 and over received a dental examination and an interview in their own homes
- q Core information gathered was comparable with the UK National Study of Adult Dental Health of 1998
- q For this age group, indicators of oral health have a different emphasis from those in the school studies and are broader-based; however, similar criteria are used. DMFT was recorded alongside details of tooth support, surrounding oral structures, presence and condition of prostheses, and function.
- q In addition, much qualitative information was collected regarding attendance, barriers to attendance, beliefs and attitudes towards oral health and treatment, and the impact of oral health upon well-being and quality of life

## RESULTS OF SURVEYS

### FIVE YEAR OLD CHILDREN

*Standardised school-based population studies conducted in 1987, 1997, 2000 and 2002*

1. The overall trend for improvements in dental health seen in Jersey over the past 15 years has reached a plateau. Indicators such as average number of teeth and proportion of children affected by dental decay have altered little between recent surveys (Figs 1,2).
2. Comparison with the UK is favourable; the overall dental decay experience level in Jersey is similar to the fluoridated West Midlands.
3. *However*, finer analysis of school populations shows that there are pockets of extremely poor dental health within Jersey's five year olds; this is a cause of concern.
4. A comparison between individual schools shows a gradient of dental health, with the Private schools having the healthiest teeth (Fig 3). As is often demonstrated on an individual basis, the state of children's dental health within a school correlates broadly with the socio-economic background of its children.
5. The schools with the worst dental health are St Mark's, Rouge Bouillon, Grands Vaux and Le Squez. The dental health, measured by decay experience, of all these schools has deteriorated between the 2000 and 2002 surveys. St Mark's children have almost four times the average decay experience when compared with the Island mean.
6. 64% of five year olds have attended a dentist; 14% of first visits are due to pain or a problem. 90% of UK five year olds have attended a dentist.
7. 18% of five year olds have been given Fluoride supplements at some time.
8. Because dental decay typically progresses slowly over several months, the majority of the decay evident in the five year old children began before the child started school; thus it is linked more to home environmental factors, particularly a diet with frequent ingestion of refined sugars.
9. A strategy aimed at a reduction in the decay experience of young children should be targeted at the parents of those pre-school children who are most at risk of developing disease. Using the epidemiology, it is possible to target the geographic catchment areas of dentally poorly performing schools. Individual risk indicators could include socio-economic deprivation and poor general health.

### SEVEN & EIGHT YEAR OLD CHILDREN

*Standardised school-based population studies conducted in 2000 and 2002.*

1. At the age of seven, the average number of teeth affected by decay was found to be double that at five.
2. There are no comparable recent data for the UK at this age.
3. The variation in dental health between schools seen in the five year olds remains evident at the age of seven. St Mark's, Rouge Bouillon, Grands Vaux and Le Squez still demonstrate the worst dental health.
4. Schools show a great variation in decay experience with regards to amount and timing. Some school populations seem to develop decay early, and have a high caries rate at five; others may show increased susceptibility after starting school. The "worst" schools appear to demonstrate both. Although the majority of the decay present at the age of five has been initiated in the pre-school years, between the ages of five and seven, the school environment becomes more influential. Thus, the profile and timing of disease in each individual school has implications for the planning and targeting of preventive strategies.
5. The proportion of children with clean teeth drops dramatically between the ages of five and seven. Less than half of the seven year olds seen in 2002 had clean teeth.
6. 88% of the seven year olds have attended a dentist.
7. 27% of the seven year olds had visible evidence of an enamel defect or discolouration. The issue of enamel dysplasias and discolouration in Jersey residents merits deeper investigation.

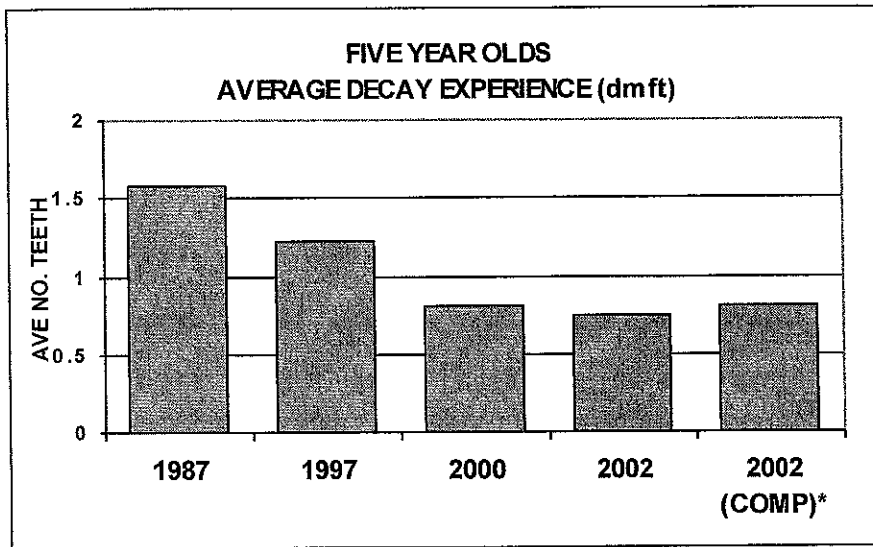


FIGURE 1: A comparison between the average decay experience, active and treated, (dmft) found in five year olds in 1987,1997,2000 and 2002. (Deciduous dentition only).

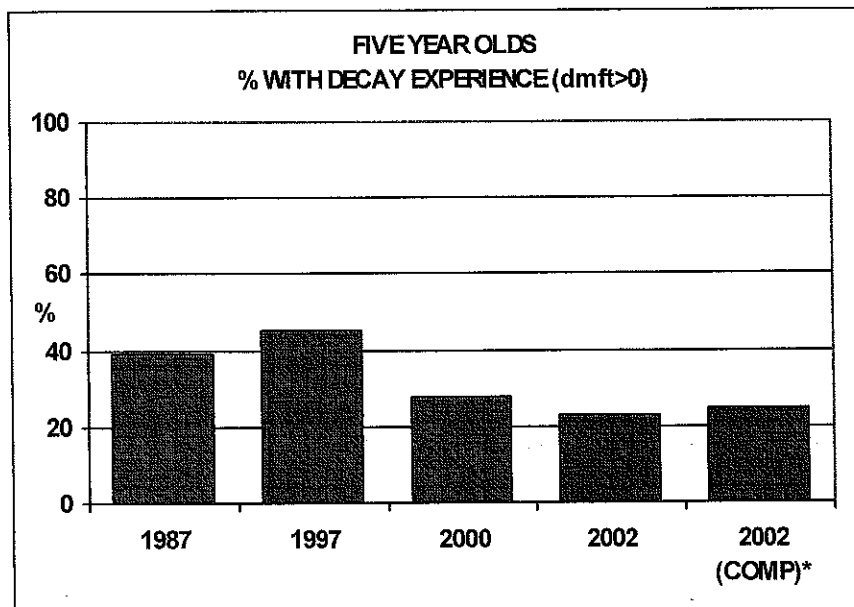
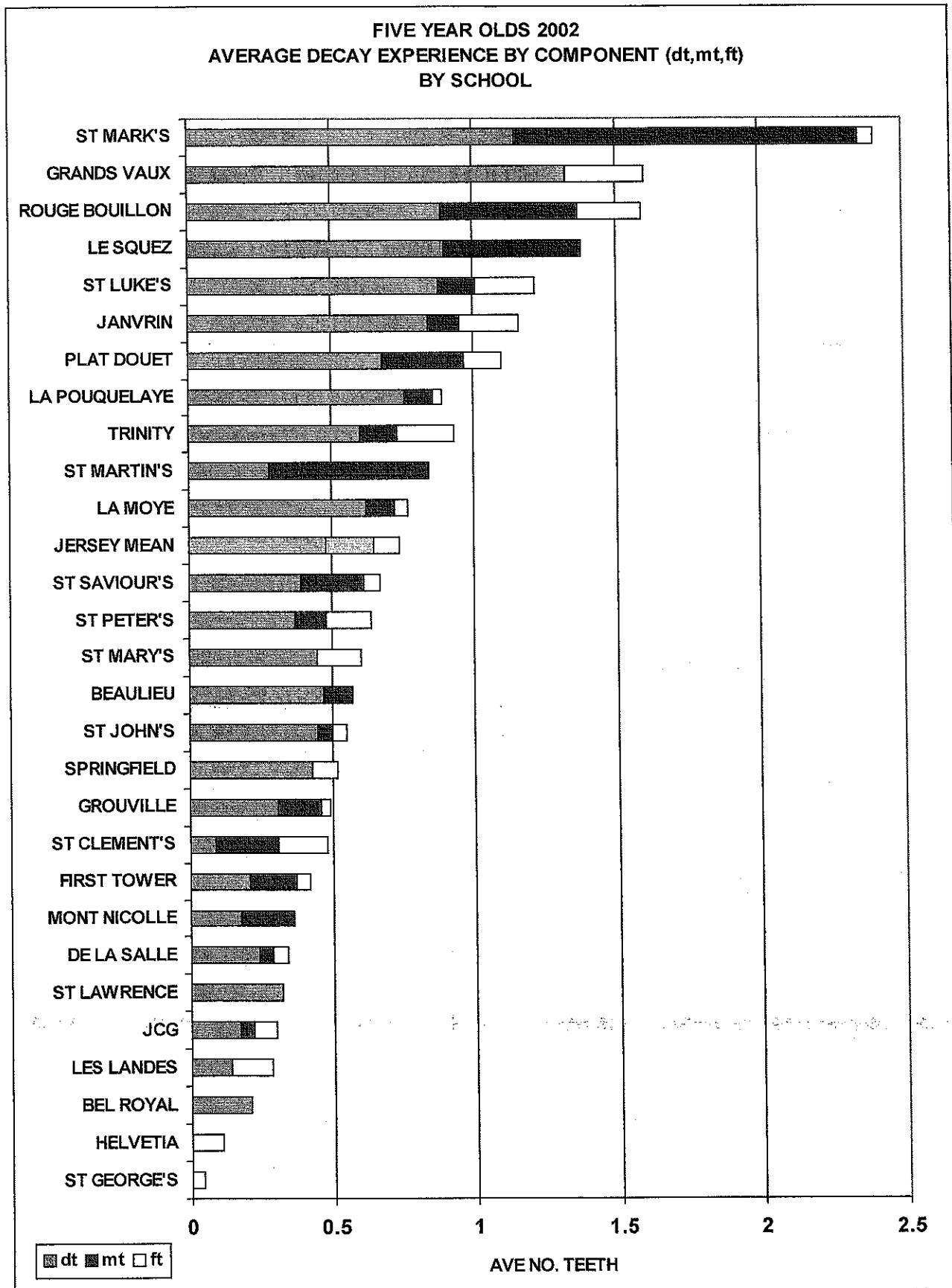


FIGURE 2: Percentage of five year olds with experience of dental decay in 1987, 1997, 2000 and 2002. (Deciduous dentition only).

\*2002 COMP – using the 2002 results only from the schools examined in 2000



**FIGURE 3: Average decay experience, active and treated (dmft) by component, found in five year old Jersey children in 2002, by school.**

## **TWELVE YEAR OLDS**

*Standardised school-based population studies conducted in 1987, 1997 and 2001.*

1. Dental decay experience of Jersey 12 year olds is similar to that found in the UK studies. It is low due to the short period within which most of the permanent teeth have been present in the mouth.
2. The proportion of the decay which has been treated is higher in Jersey than in the UK.
3. The polarisation of dental health between Private schools and State schools is again strongly evident (Fig 4).
4. Around a third of 12 year olds have received preventive Fissure Sealant treatment on one or more permanent teeth.
5. Approximately half of the 12 year olds are exhibiting signs of gingival inflammation.
6. 58% report that they attend a dentist regularly.
7. Only just over a half of twelve year olds would prefer a decayed permanent posterior tooth to be conserved; 30% state that they would prefer extraction.
8. Parents display a lack of knowledge regarding the Jersey Dental Fitness Scheme.
9. The level of enamel defects and discolouration appears to be less than in the UK; however, there is a suggestion that the more obvious discolourations and the more destructive hypoplasias are found more often in the Jersey youngsters.

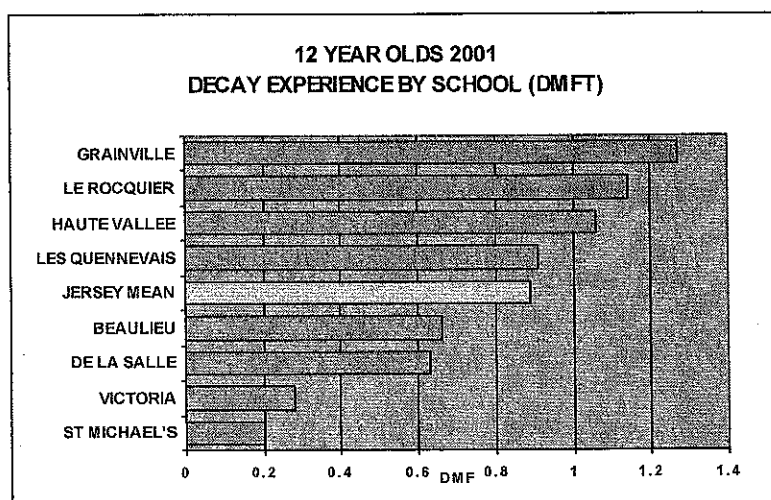


FIGURE 4: Average total decay experience, active and treated, found in 12 year olds in 2001, by school. (Permanent teeth only)

## **FOURTEEN YEAR OLDS**

*Standardised school-based studies were conducted in 1987 and 1999; these examined only small samples of the fourteen year old population. A total population survey is planned for March 2003.*

## **OVER-65'S**

*Survey of a random sample of over 400 people aged 65 and over. Comprised of oral examination (including dentures) and interview in their own homes. Conducted in autumn 2001.*

1. As seen in the youngsters, socio-economic factors are still associated with differences in dental health. However, there are other influences which are generally specific to the older population which appear to affect dental health.
2. The over 65's in Jersey retain more teeth than their UK counterparts, however, the condition of the teeth is not dissimilar to that found in the comparable peer group in the UK.
3. There is a substantial amount of treatment need from the profession's point of view, but little need perceived by the public.
4. The treatment need has changed from mainly decay which is found in younger age groups, to the problems of gum disease, unsatisfactory dentures, and pathology associated with the soft tissues of the oral cavity.
5. Attendance for check-ups is infrequent – around 25% attend regularly; overall, more than 70% of last visits were prompted by problems. The prevailing attitudes are - "no trouble, no need to attend", and "no teeth, no need to attend".
6. The public are putting up with low-grade chronic pain and discomfort rather than seek professional help. There are particular barriers to dental attendance for older people including social, practical, physical and financial constraints.

**SURVEY OF ORAL HEALTH AND TREATMENT NEEDS  
OF OLDER AND ELDERLY RESIDENTS OF JERSEY 2001**

**SUMMARY OF RESULTS**

**POPULATION - SOCIAL PROFILE**

- q Increased proportion of people living alone as age increases; over half the population aged over 75 found to be living alone, many are females
- q Social problems frequently found in the elderly population –
  - Isolation, loneliness and depression
  - Financial restrictions due to reduced incomes; may have assets but little disposable equity
  - Physical abilities, particularly mobility, diminish
  - Access to transport more difficult, fewer having cars, many cannot afford taxis, poor knowledge of Hospital transport facilities
- q These problems appear to be more significant in females.
- q There is a greater proportion of females in lower income bands
- q As the age of the population increases, so does the proportion of females to males. Therefore the social and economic problems become even more influential in the older age groups, making them even more vulnerable.
- q Greater incidence of general health problems

**ORAL HEALTH**

- q Generally, lower socio-economic status and lower income is associated with poorer oral health
- q Approximately 30% of all interviewees had suffered oral pain or discomfort in the last six months
  - **THOSE WITH NO NATURAL TEETH (EDENTATE)**
  - q 15% have no natural teeth; this compares well with UK where around 40% of this age group have no natural teeth remaining
  - q A greater percentage of those in lower socio-economic groups and on lower incomes are edentate, they also lose their teeth at an earlier age
  - q Those with no natural teeth attend even less frequently than those with natural teeth – “no teeth, no need”
  - q 80% were found to have abnormalities or disorders of the oral cavity or surrounding structures; although the majority of pathologies were simple, they are more likely to progress to more sinister pathology in this age group, especially if neglected. As the individual may not detect the potential serious nature of a disorder, frequent professional screening should be encouraged in the older population.
- **DENTURES (FULL OR PART)**
- q Many dentures are old and ill-fitting. 40% of the edentate had complete dentures over 20 years old, about 20% of those who had some natural teeth had dentures over 20 years old.
- q More than 80% of the edentate population had problems with their dentures, 75% of partial denture wearers had problems
- q Problems were mainly associated with discomfort during eating, retention, speaking and appearance
- q The examining dentist considered that around half of the dentures seen should be replaced
- q 70-80% of those with problems would not visit the dentist, but preferred to put up with the problems; the most frequently cited reason was cost

- q Poor dentures have implications for general health, well-being and quality of life, due to
  - Dietary restrictions, leading to poor nutrition
  - Pain and discomfort
  - Damage to oral tissues and surrounding structures
  - Repeated trauma and irritation increasing the likelihood of serious pathology
  - Social and psychological consequences, such as decreased communication and social interaction, embarrassment and even depression

- **NATURAL TEETH**

- q The condition and number of retained natural teeth is similar in Jersey and the UK
- q The average number of teeth retained decreases with age
- q There is a strong link between number of teeth retained and income level
- q The higher socio-economic groups are more likely to have a functional dentition and to retain teeth longer; those in the lower socio-economic groups are "further down the road" to being edentate
- q Many of the subjects who had gone to great lengths to preserve their dentition over the years with complex restorations are distressed to find that the cost of maintaining these restorations is prohibitive now that their financial situations have changed; they find that they are having to lose teeth when complex restorations fail.
- q UK studies have found that people are retaining more natural teeth for longer; there is every reason to believe that this is similar in Jersey. Preservation of the natural dentition presents particular problems to the clinician; treatment can be more complex not only because the teeth themselves become more fragile and difficult to conserve, but also because patients acquire more medical and pharmaceutical complications. This will present challenges for clinicians and also for those funding treatment services for the elderly.

**DENTAL ATTENDANCE AND ATTITUDES**

- q Around 25% attend a dentist regularly on an annual basis
- q Approximately 70% of those interviewed stated that their last visit to the dentist was due to pain or a problem; many had left it until they could not endure it any longer
- q Barriers to seeking treatment are associated with physical, practical, economic and attitudinal factors
- q *Physical*
  - Mobility and difficulty getting out of the house
  - general health
  - some dental practices are not ground floor accommodation
  - some dental practices may not have disabled facilities
- q *Practical*
  - lack of transport
  - lack of knowledge of dental services and how to access them
  - some dental practices are not accessible by good public transport service
- q *Economic*
  - cost of travel, especially for repeated visits, unaffordable
  - perceived high cost of "High St" dentistry; regular checks are low priority when income restricted, problems are tolerated for long periods
  - fear of basic cost of items of treatment, also fear of unexpected extra items which may be prescribed which may be unaffordable and the consequent embarrassment if unable to pay
- q *Attitudes and beliefs*
  - "no problems, no need to go"
  - "no teeth, no need to go"
- q Effects of social problems and barriers upon dental attendance and oral health are more pronounced in lower socio-economic groups and those receiving lower personal incomes
- q Many in lower income bands stated that they would be tempted to attend a dentist more frequently if the treatment was subsidised or free, but the subsidy would have to be substantial

## **PARTICULAR PROBLEMS FOR ELDERLY PATIENTS AND ORAL HEALTH**

- q Many older people are regularly prescribed drugs which have side-effects upon the oral cavity
  - some drugs may reduce saliva flow, this diminishes the natural cleansing effect and can lead to more dental cavities and oral infections
  - reduced saliva flow may lead to poor retention of dentures
  - taste may be affected by reduction in saliva, this may lead to a decline in eating habits and poor nutrition
  - consumption of sweets may increase in order to stimulate saliva or freshen the oral cavity, this will increase susceptibility to dental decay
  - medicines may have a high sugar content to improve palatability, regular usage can lead to cavities
- q Increasing age is associated with an increasing risk of serious pathology of the oral cavity
- q Oral hygiene becomes more difficult to maintain, especially if there are complex restorations and diminished physical ability

## **PARTICULAR PROBLEMS FOR ELDERLY PATIENTS AND DENTAL TREATMENT**

- q There is an increased likelihood of medical problems and possibly complex drug regimes which may influence treatment planning or preclude treatment in a dental surgery environment
- q Lengthy procedures in the dental chair may be less well tolerated due to physical or mental factors
- q Adaptation to new dentures and other treatment options may be reduced
- q Heavily restored teeth which have been retained "at all costs" in the past need increasingly complicated treatment to preserve them; they also can become more fragile and brittle.
- q There is evidence that dental health is improving at all ages, the long-term consequence of this is that many more older people will be retaining teeth for longer. These teeth will need more complex treatment to conserve them, this will have consequences for professional training and patient tolerance

## **DANGERS OF DELAYING DENTAL ATTENDANCE**

- q Simple pathologies may advance and become locally more widespread and debilitating
- q Chronic oral infections and low-grade pathologies may have deleterious systemic effects e.g. chronic oral discomfort may lead to nutritional deficiencies as eating becomes an unpleasant activity
- q Many oral pathologies have the tendency to become cancerous if neglected, this is difficult for the non-professional to detect and can be well-advanced when presented at a surgery
- q Repeated long-term irritation, trauma and ulceration from poorly-fitting dentures or broken teeth is recognised as a possible precursor to oral cancer
- q Ill fitting dentures or pain from natural teeth when eating may lead to poor nutrition and systemic consequences
- q Ill fitting dentures can lead to adaptive oral behaviour which can make the provision of new dentures complicated
- q Ill fitting dentures of long standing will have damaging effects upon oral structures, particularly resorption of denture supporting tissues. This will make retention of dentures increasingly difficult
- q All these low-grade but persistent problems may have an effect upon well-being, socialisation and overall quality of life. Psychological sequelae such as depression may be extreme but can be a consequence for a small number of sufferers, especially when associated with other negative lifestyle factors such as loneliness and general poor health



## SOME FREQUENT ISSUES RAISED BY INTERVIEWEES

### *Costs*

- q Many are unhappy with their dental situation, but for a number of different reasons will not seek professional help; this behaviour is evident across the socio-economic groups and cost is the most frequently cited reason for all groups
- q Many would choose conservative treatment in a perfect world, even if it was time consuming and complex; but would be obliged to choose extractions in reality because of cost implications
- q Even those who have "invested" a considerable amount of money on retaining their dentition with advanced dentistry such as crowns, bridges, implants may find it impossible to maintain these if they fail; after retirement, disposable income may be far more limited even for those who were previously on high incomes
- q Many older people were spending so much on medical treatment and medicines, that spending on dentistry was not regarded as a priority
- q A few dentists allow payment over a period of time; this is helpful and patients would appreciate more of this type of scheme

### *Misconceptions*

- q There was a lack of awareness that the dentist would examine for more than fillings or denture problems e.g oral pathology, or advising on prevention. Many thought "I have no problems therefore I don't need to go". Regular attendance for oral examination is extremely important at this age to detect or prevent serious oral problems
- q Some patients who cannot afford replacement dentures are being provided with new sets by technicians; besides being an illegal practice, technicians are not trained to diagnose oral disorders. Potential problems may be missed, and the patient lulled into a false belief that their mouth is healthy
- q It was not realised that there are often simple solutions to dental problems and many feared that they would have to spend a lot of money e.g. on a new set of dentures

### *Subsidy Schemes (Health Insurance Exemption and new ESS scheme)*

- q There was confusion regarding eligibility for the available schemes, particularly Health Insurance Exemption and whether dental treatment costs were included.
- q Many did not know of the existence of subsidy schemes
- q Many were suspicious of "means testing"
- q Application forms were found to be difficult to obtain, difficult to complete
- q Some aspects of eligibility were not appropriate for this age group. Many people had an unrealisable asset - their house, but little available cash.
- q The scale of subsidy was not sufficient to cover some situations e.g. complete dentures costing £900 a set were still out of the reach of many people even when subsidised

### *Accepted "Wisdom" and Acceptance*

- q Although most of those interviewed believe in the importance of preserving natural teeth, there is a feeling that due to circumstances beyond control, such as the high costs and difficult access to dental treatment, a "toothless old age" is inevitable.
- q Many would rather put up with their problems, and find the barriers to dental treatment insurmountable