



## 2: Disease and related disorders – a report from the Adult Dental Health Survey 2009

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**Author(s):** Deborah White, Nigel Pitts, Jimmy Steele, Katharine Sadler, Barbara Chadwick

**Editor(s):** Ian O' Sullivan

**Responsible Statistician:** Phil Cooke, Section Head, Dental and Eye Care

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# Contents

Introduction	5
Key Findings	6
2.1 Dental caries	7
Introduction	7
2.1.1 All decayed teeth (total caries)	7
2.1.2 Coronal caries	9
2.1.3 Root caries	11
2.1.4 Trends in dental caries	13
2.2 Periodontal Diseases	15
Introduction	15
2.2.1 Gingival bleeding	16
2.2.2 Periodontal pocketing	18
2.2.3 Periodontal loss of attachment	19
2.2.4 Trends in periodontal condition	20
2.3 Tooth wear	21
Introduction	21
2.3.1 Prevalence of tooth wear	21
2.3.2 Trends in tooth wear	22
Conclusion	23
Notes and References	24
Tables	25

# Introduction

The data in this report are taken from the clinical examination of a representative sample of adults in England, Northern Ireland and Wales. The estimates presented provide an insight into the current picture of common oral diseases (dental caries, periodontal diseases and tooth wear) in adults and how this has changed since the last survey, over ten years ago.

Examining a survey sample of the general population in this way provides a contemporary, comprehensive assessment of oral health and diseases which includes those who do not routinely access dental care. Although invaluable, the measurement of disease in a survey like this does not map precisely to treatment need that is, to what a dentist would prescribe; a dentist in a dental practice has a range of additional tools that will help diagnose disease and will also make individual decisions about when to intervene with what type of care. However, utilising survey estimates does indicate where in the population the disease burden lies and who appears to be at greatest risk. As such the current estimates provide a clear marker of the distribution of disease and the amount of dental treatment that may be required, especially when compared to previous surveys.

Within this report, the current distribution of obvious dental caries (decay), periodontal (gum) disease and tooth wear is presented along with some trends over time. The diagnostic criteria used for the ADHS clinical examination and the approach taken to train and calibrate examiners are outlined in the *Adult Dental Health Survey 2009: Foundation Report*.

All of the Tables are to be found at the back of the report.

Full background and methodological details for the survey, including response and clinical examination conversion rates can be found in *Foundation report: Adult Dental Health Survey 2009*. A glossary of all clinical terms can also be found in this report.

## Key Findings

- Just under one third of adults (31 per cent) had obvious tooth decay in either the crowns or roots of their teeth. For those adults who had some decay, the average number of teeth affected was 2.7, compared with an average of 0.8 among all dentate adults.
- There are social variations in dental decay with adults from routine and manual occupation households being more likely to have decay than those from managerial and professional occupational households (37 per cent compared with 26 per cent)
- The prevalence of decay in the crowns of the teeth varied with age, with the highest prevalence in adults aged 25 to 34 (36 per cent) compared with those aged 65 to 74 (22 per cent).
- Primary dental decay (decay on the surface of a tooth that may or may not have evidence of restorations on another surface) affected almost a quarter (23 per cent) of all dentate adults and comprised the majority of decay in crowns.
- The prevalence of decay (using the natural tooth crowns as the measure) in England has fallen from 46 per cent in 1998 to 28 per cent in 2009, and this reduction is reflected in all age groups.
- Seven per cent of adults had active root decay and this proportion varied by age, with 1 per cent of 16 to 24 year olds affected compared with 11 per cent of 55 to 64 year olds and 20 per cent of 75 to 84 year olds.
- Overall 45 per cent of adults had periodontal (gum) pocketing, exceeding 4mm, although for the majority (37 per cent) disease was moderate with pocketing not exceeding 6mm.
- Moderate tooth wear has increased from 11 per cent in 1998 to 15 per cent in 2009, although severe wear remains rare.

# 2.1 Dental caries

## Introduction

The measures that have been used to code dental caries in the present survey are consistent with those used in the 1998 ADHS, but are different to those used in the surveys conducted before 1998. In those earlier surveys dentine cavitation was the threshold at which decay was measured. However our changing understanding of the disease process was reflected in the 1998 and 2009 surveys by the inclusion of stages prior to cavitation. Visual changes in the caries process, usually manifesting as a shadow under the surface of the tooth, are suggestive of dentine involvement beneath the intact enamel surface and were included in the criteria for measuring decay. This is the stage at which many dentists intervene operatively to place a filling. The visual changes associated with early caries in the dental enamel which dentists may treat preventively were not, however, recorded in the present survey; such surfaces are regarded as “sound”. This change in treatment philosophy and disease measurement makes it difficult to compare trends between earlier surveys directly.

### 2.1.1 All decayed teeth (total caries)

The conditions in which the ADHS clinical examination were conducted allowed the dental examiners to establish the number of teeth seen with decay extending into the dentine of tooth crowns (coronal caries) and roots, including new decay (decay on the surface of a tooth that may or may not have evidence of restorations on another surface – these are known as primary caries) and decay which is immediately adjacent to previously placed fillings or fissure sealants (known as secondary caries). The classification of decay here excludes any decay which has occurred but has been judged to have “arrested” as this does not represent active disease.

Decay can occur on the crowns of the teeth or on the roots, the latter particularly in older people where the gums have receded. The way in which the condition presents and progresses is different on crowns than on roots, but the risks for the disease are broadly similar. In previous ADH surveys, crowns and roots were looked at as separate entities. However, in order to understand the overall picture of decay and to get an indication of who is at risk and where operative treatment needs exist, it is important to look at whole teeth. Teeth with extensive decay, where restoration is unlikely or impossible are also included in this section. In the next section decay in crowns and roots will be examined separately and for these, unrestorable teeth are excluded.

As can be seen in Table 2.1.1 just under one third (31 per cent) of adults had obvious decay (dental caries on crowns or roots). There was variation with age, although no clear pattern emerged; 27 per cent of 45 to 54 year olds and 65 to 74 year olds had obvious decay, compared with 40 per cent of those aged between 75 and 84 years and 37 per cent of those aged 25 to 34. A greater proportion of men (34 per cent) than women (28 per cent) had obvious decay. The proportion of obvious decay also varied between countries; 47 per cent of adults in Wales had obvious decay compared with 30 per cent of adults in England, and 28 per cent in Northern Ireland. The proportion of obvious decay also varied between English Strategic Health Authorities (SHAs), from a high of 39 per cent in the West Midlands SHA to a low of 21 per cent in the South East Coast SHA. Finally, a higher proportion of those adults from routine and manual occupational households (37 per cent) had obvious

decay compared with adults from managerial and professional occupational households (26 per cent).

*Table 2.1.1*

The prevalence of obvious decay also varied significantly by a number of behavioural factors, including usual reason for dental attendance; 22 per cent of adults who said they attend for a regular check-up had obvious decay compared with 50 per cent of those who only attend when having trouble with their teeth. Also, 25 per cent of those who said they had been to see a dentist in the previous 12 months had obvious decay compared with 59 per cent of adults who said they had not been to the dentist for over ten years.

*Table 2.1.2*

Table 2.1.2 also shows that obvious decay also varied by frequency of reported tooth brushing, 27 per cent of adults who said they brushed twice a day or more had obvious decay compared with 67 per cent of adults who said they never brushed their teeth. In addition, just over two-fifths (44 per cent) of current smokers had obvious decay compared with under a third (27 per cent) of those adults who said that they never smoked.

*Table 2.1.2*

The average number of teeth affected by obvious decay was also calculated however this does not provide a true picture of the burden of disease as there are a high proportion of people who do not have any. For example, the mean number of teeth with obvious decay in the general population is 0.8, but when only those dentate adults with at least one tooth with obvious decay are included the average increases to 2.7 teeth. Amongst adults with at least one tooth with obvious decay differences were observed between age-groups; men and women; English SHAs; and the socio-economic classification of the household in the number of teeth on average that had decay. For example, adults aged 25 to 34 had 3.1 teeth on average with obvious decay compared with 2.3 teeth among adults aged 35 to 44; men had 3.0 teeth with obvious decay compared with 2.4 among women. Similarly, the average number of teeth with obvious decay was highest among adults in the North East and South West SHAs (3.2 respectively) and lowest among adults in the East of England SHA (2.2 teeth on average). Finally, adults from routine and manual occupational households had more teeth with obvious decay on average (3.2) than adults from managerial and professional occupation households (2.2).

*Tables 2.1.3 and 2.1.4*

Differences were also observed in terms of the average number of teeth with obvious decay by several behavioural factors. Table 2.1.5 shows that adults who said that they attend the dentist for a regular check up had fewer teeth with obvious decay than adults who said they only attend when they have trouble with their teeth, 2.1 compared with 3.3. Similarly, adults who said that they had been to the dentist in the previous 12 months had 2.3 teeth with obvious decay on average compared with 4.6 teeth among adults who said that they had not been in over ten years; and adults who said that they brushed their teeth at least twice a day had fewer teeth on average with obvious decay than those adults who said that they never brushed their teeth (2.2 compared with 5.0). Finally, current smokers had a higher average number of teeth with obvious decay (3.5) than adults who said that they never smoked (2.4).

*Table 2.1.5*



## 2.1.2 Coronal caries

The majority of people that were affected by caries had coronal caries, in other words obvious decay in or around the natural crowns of their teeth. The natural crowns are vulnerable to decay from the time the tooth erupts into the mouth so decay of the crowns can occur at any age. This section examines both primary caries (new decay of the surface of a tooth that may or may not have decay on another surface) and secondary caries together (occurring adjacent to existing restorations) and then for each separately.

Table 2.1.6 demonstrates that 29 per cent of adults had coronal caries (primary or secondary). The proportion of adults with coronal caries varied by age group, men and women, countries, SHAs and socio-economic classifications of the household. The highest proportion of adults with coronal caries was observed among adults aged 25 to 34 (36 per cent) and the lowest was among adults aged 65 to 74 (22 per cent). Men were more likely than women to have coronal decay (32 per cent compared with 26 per cent) and a greater proportion of adults in Wales had coronal decay (43 per cent) than adults in England (28 per cent) and Northern Ireland (27 per cent). There was also a significant difference between English SHAs, with the highest proportion of adults with coronal decay observed in the West Midlands SHA (35 per cent) and the lowest in South East Coast SHA (20 per cent). Finally, there was also a socio-economic gradient; just over a third of those people (36 per cent) in routine and manual occupations had coronal decay compared with about a quarter (24 per cent) of those in managerial and professional occupations.

*Table 2.1.6*

Table 2.1.7 shows that the prevalence of coronal caries also varies between adults with different patterns of dental attendance. Specifically, just under half (49 per cent) of adults who said that they only went to the dentist when they were having trouble with their teeth had decay compared with one-fifth (20 per cent) of adults who said they went to the dentist for a regular check up. Similarly, there was a gradient in terms of the time adults said it had been since they last attended the dentist; 23 per cent of adults who had visited the dentist within the last year had coronal caries compared with 40 per cent of adults who had attended between one and five years previous, and 56 and 58 per cent respectively of adults who either said it was between five and ten years, or over ten years since they last visited the dentist.

*Table 2.1.7*

Variations in the prevalence of coronal caries were also observed by tooth cleaning frequency and smoking status. Just over a quarter (26 per cent) of adults who said they brushed their teeth at least twice a day had coronal caries compared with 65 per cent of those adults who said that they never brushed their teeth. Finally, 43 per cent of current smokers had coronal caries compared with 26 per cent of adults who said that they never smoked.

*Table 2.1.7*

### Primary coronal caries

Primary dental caries in dentine indicates new disease which has not been treated by a dentist, as opposed to decay that occurs around an existing filling (secondary decay). There is therefore, more likelihood of someone with less experience of dental treatment having primary dentine caries. The majority of all coronal caries fell into this category, 23 per cent of all dentate adults had primary caries, however there were differences by age; for example,

28 per cent of 16 to 24 year olds and 33 per cent of 25 to 34 year olds had primary decay compared with 18 per cent of adults aged 45 to 54 and 55 to 64, and 14 per cent of 65 to 74 year olds. That older adults had a smaller proportion of teeth with primary decay relates to the prevalence of restorations in older age groups as outlined in *Complexity and maintenance: a report from the Adult Dental Health Survey 2009*.

There were also differences by sex (25 per cent of men had primary decay compared with 21 per cent of women), country (primary decay was at 33 per cent highest in Wales and lowest at 20 per cent in Northern Ireland), English SHA (28 per cent of adults in the West Midlands SHA had primary decay compared with 15 per cent of adults in the East of England SHA), and socio-economic classification (19 per cent of adults from managerial and professional occupation households had primary decay compared with 27 per cent of adults from routine and manual households). Unsurprisingly, these patterns mirrored those for the overall coronal caries prevalence.

*Table 2.1.8*

In a similar way to overall coronal caries the level of primary dentine decay also varied by a number of behavioural factors. There were significant variations by attendance behaviour, time since last visit to the dentist, frequency of tooth cleaning and smoking. For example, 15 per cent of those people who reported that they attended for a regular check-up had primary caries compared with 43 per cent who said they never went to the dentist had some primary dentine decay; and one-fifth (20 per cent) of adults who said that they brushed their teeth at least twice a day had primary decay compared with 56 per cent of adults who said that they never brushed their teeth.

*Table 2.1.9*

It should be appreciated that the overall proportion masks the wide variation between individuals in terms of the number of sites and teeth affected. Although 77 per cent of adults overall have no primary coronal caries, among those who do, 12 per cent have one, 5 per cent have two, and 6 per cent have three or more. There are variations with age and higher proportions of the younger age groups have three or more sites with decay than their older counterparts. For example 9 per cent of 16 to 24 year olds and 11 per cent of 24 to 35 year olds compared with 2 per cent of those aged between 65 and 74.

*Table 2.1.10*

Higher proportions of adults who attend the dentist only with trouble (13 per cent), who visited the dentist over 10 years ago (18 per cent) or who report never cleaning their teeth or cleaning them less than once a day (23 per cent) have three or more sites with decay compared with those who attend for a regular check-up (2 per cent), who attended the dentist less than a year ago (4 per cent) or who brush their teeth twice a day or more (4 per cent).

*Table 2.1.11*

## Secondary coronal caries

Secondary dental caries indicates dental decay which has occurred immediately adjacent to previously placed restorations or fissure sealants. This type of decay makes up a smaller proportion of the total burden of coronal decay than primary caries. The overall prevalence of secondary coronal caries was 7 per cent amongst all dentate adults; the prevalence varied between countries and English SHAs. For example, 13 per cent of adults in Wales had

secondary coronal decay compared with 5 per cent in Northern Ireland, while 12 per cent of adults in the West Midlands and South West SHAs had secondary decay compared with 3 per cent of adults in the South East Coast SHA. There were also differences between socio-economic groups with 5 per cent of adults from managerial and professional occupation households having secondary decay compared with 9 per cent of adults from routine and manual occupation households.

*Table 2.1.12*

As for the prevalence of both overall caries, and primary coronal caries, the proportion of adults with secondary caries varied by behavioural factors including attendance behaviour (6 per cent of adults who went for a regular check up had secondary caries compared with 10 per cent of those who said that they never go to the dentist); time since last dental visit (6 per cent of adults who had been to the dentist in the previous 12 months had secondary decay compared with 10 per cent of adults who had not been in over ten years); and frequency of tooth brushing (6 per cent of adults who reported brushing their teeth twice a day or more were affected compared with 14 per cent who never brushed or brushed less than once a day). In addition a greater proportion of current smokers had secondary caries (10 per cent) compared with both ex-smokers and adults who never smoked (6 per cent respectively).

*Table 2.1.13*

As for primary caries, there is wide variation between individuals in terms of the number of sites with decay that they experience. Although secondary caries is less prevalent than primary caries, it can be seen that there is some variation between those who have one carious lesion and those who have two or more.

*Tables 2.1.14 and 2.1.15*

### 2.1.3 Root caries

In normal, healthy mouths the roots of teeth are covered by the gum or gingivae (soft tissue), albeit with some gum recession as part of the normal aging process. However, the accumulation of years of gum (periodontal) disease means that more substantial gum recession is likely to take place as an adult gets older. Gum recession in turn leads to an increased exposure of the root surfaces of teeth and therefore it is to be expected that with increasing age, the prevalence of caries affecting the root surfaces might increase.

Overall, 73 per cent of adults had exposed and potentially vulnerable root surfaces and the average number of teeth with exposed root surfaces was 7.3 (see Table 1). The overall proportion of adults with exposed roots varied significantly by age; less than a third (31 per cent) of adults aged 16 to 24 had exposed root surfaces compared with over 90 per cent of adults in every age group above 55 years. Likewise, the average number of teeth with exposed roots also increased with age, 2.1 in the 16 to 24 year olds, to close to 11 or more amongst adults in all age groups above 55. It is important to recognise however, that because the number of natural teeth that are retained decreases with age (see *Oral health and function: a report from the Adult Dental Health Survey 2009*), the proportion of teeth that are at risk from root caries will also increase with age. For example, only 7 per cent of the teeth of adults aged 16 to 24 are vulnerable to root caries compared with 36 per cent of teeth in the 45 to 54 age group, 56 per cent in the 65 to 74 age group and almost two thirds, 62 per cent in those aged 75 to 84.

*Table 2.1.16*

Although it is useful to look at the average number of teeth affected within the general population, it is important to understand what the burden of risk and disease is in those who actually have exposed root surfaces. Table 1 below shows that amongst all adults who have exposed root surfaces, the average number of affected teeth was 10.1 (2.8 teeth more than for the general population). However, the difference in the scale of the problem between adults in the general population and those who are actually affected is greater in younger adults than older adults. For example, as detailed above, the average number of exposed root surfaces among adults aged 16 to 24 in the general population is 2.1 teeth compared with 6.9 among 16 to 24 year olds who actually have exposed root surfaces, a difference of 4.8 teeth. In contrast, the average number of teeth with exposed root surfaces among adults in the general population aged 65 to 74 is 11.8 teeth, compared with 12.3 among adults who actually have exposed root surfaces in the same age group, a difference of 0.5 teeth.

Table 2.1.16

The mean number of teeth in the general population with root caries (active root decay) is 0.2. It is also 0.2 amongst those with exposed roots (due to small numbers and rounding). However, as the distribution is not spread evenly through the population, the number of teeth affected in those who have some root decay increases to 2.3 overall (See Table 1).

**Table 1 Presence of active root caries and risk of root caries in dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>
<b>Amongst all dentate adults</b>	
Percentage of people with any exposed (vulnerable) root surface <sup>1</sup>	73
Mean number of teeth with exposed (vulnerable) roots	7.3
Percentage of all teeth with exposed (vulnerable) roots	29
Percentage of people with roots with active <sup>2</sup> decay	7
Mean number of teeth with active <sup>2</sup> root decay	0.2
<i>Unweighted base</i>	6,470
<i>Weighted base (000s)</i>	42,918
<b>Amongst those with exposed (vulnerable) roots</b>	
Mean number of teeth with exposed (vulnerable) roots	10.1
Mean number of teeth with active <sup>2</sup> root decay	0.2
<i>Unweighted base</i>	5,050
<i>Weighted base (000s)</i>	31,140
<b>Amongst those with decayed roots</b>	
Mean number of teeth with root decay	2.3
<i>Unweighted base</i>	470
<i>Weighted base (000s)</i>	2,910

<sup>1</sup> an exposed (vulnerable) surface is any where the gum has receded, the root surface may be in any condition (sound, decayed, filled or worn)

<sup>2</sup> Active decay, not including hard arrested decay

In terms of active decay on the root surfaces overall, seven per cent of adults were affected. As expected the proportion of adults affected with root caries varied by age, with 1 per cent of adults aged 16 to 24 affected compared with 11 per cent of adults aged 55 to 64 and 20

per cent of adults aged 75 to 84. Differences were also observed between men and women, between English SHAs and socio-economic classifications of the household. A greater proportion of men had root caries than women (8 per cent compared with 6 per cent). In terms of SHA the prevalence ranged from 3 per cent in the South East Coast SHA to 13 per cent in the West Midlands SHA. A smaller proportion of adults from managerial and professional occupation households had root caries compared with those from routine and manual occupation households (5 per cent compared with 9 per cent).

*Table 2.1.17*

Differences in the prevalence of root caries were also observed in terms of behavioural factors including usual reason for attending the dentist, time since the last dental visit, how often people reported cleaning their teeth and smoking. For example, 13 per cent of those who said that they never go to the dentist had root caries, compared with 6 per cent of those who reported attending for regular check-ups. Similarly, 6 per cent of adults who had been to the dentist in the previous 12 months were affected by root caries compared with 21 per cent of those adults who had not been to the dentist in over 10 years; also those adults who reported cleaning their teeth twice a day had less root caries (5 per cent) than those who never cleaned their teeth or brushed less than once a day (26 per cent). Finally over one-tenth (12 per cent) of adults who said that they were smokers had root caries compared with one-twentieth (5 per cent) of adults who said that they never smoked.

*Table 2.1.18*

## 2.1.4 Trends in dental caries

Although the prevalence of dental caries in dentine has been recorded since the 1968 survey, the criteria used were changed in 1998 to include visual dentine caries. Because of this discontinuity and because the current survey covers England, Wales and Northern Ireland, for which combined estimates from previous surveys are not available, the trends presented herein cover the period 1998 to 2009 and are for England only. For Northern Ireland and Wales trend data are presented in separate reports (*Adult Dental Health Survey 2009; results for Northern Ireland, and Adult Dental Health Survey 2009: results for Wales*).

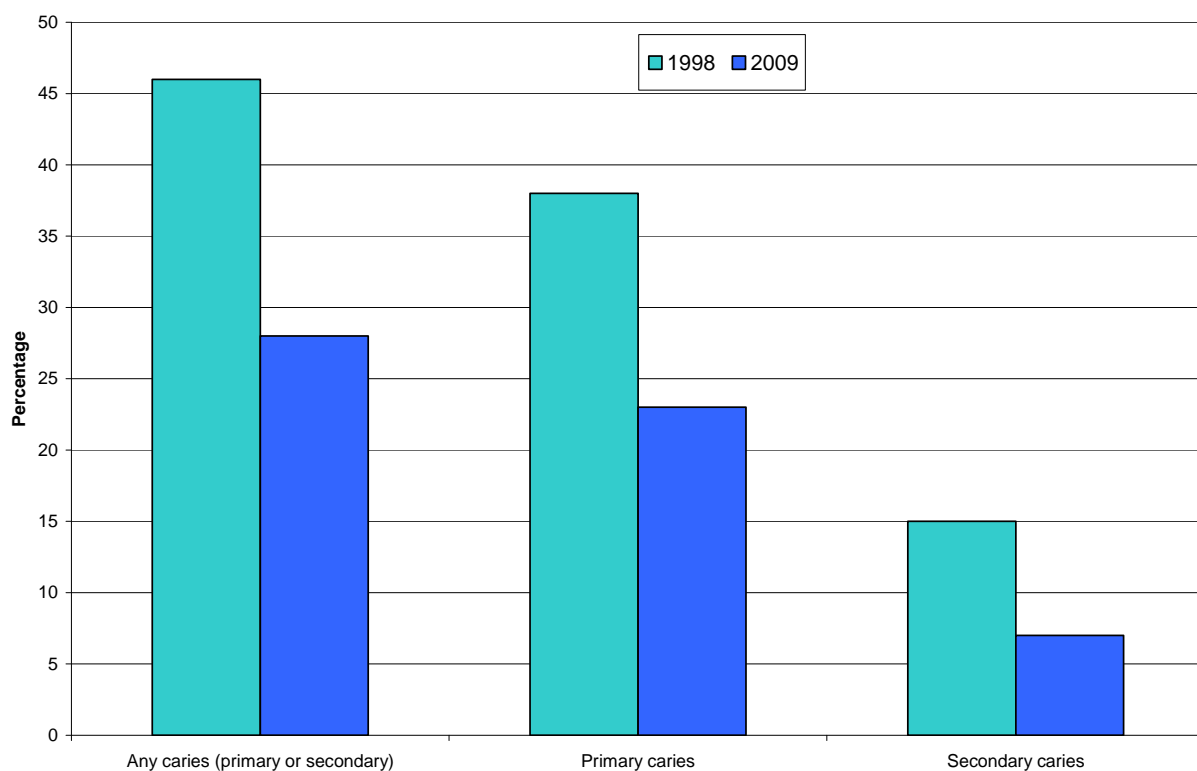
Between 1998 and 2009 the prevalence of coronal caries, both primary and secondary combined, in England has fallen from 46 per cent to 28 per cent. There were reductions across all age groups, but the largest reduction (21 percentage points) was seen in those aged 25 to 34 and the smallest in those aged 75 and over (7 percentage points).

There has also been a marked reduction in primary coronal caries over the last eleven years, falling from 38 per cent in 1998 to 23 per cent in 2009. However there are differences across age groups, with the largest reductions evident in adults aged between 45 and 74 years compared with adults under the age of 44.

Likewise the proportion of adults with secondary coronal caries has also fallen over the last eleven years; in 1998 the proportion of adults with secondary coronal caries was 15 per cent and in 2009 it was 7 per cent. Once again the reduction varied across age groups with the largest reduction evident in the youngest age group. The prevalence had changed from 11 per cent in 1998 to 4 per cent in 2009.

*Figure 2.1.1 and Table 2.1.19*

**Figure 2.1.1 Trends in percentage of dentate adults with dental caries (decay), England 1998 and 2009**



## 2.2 Periodontal Diseases

### Introduction

In the report *Oral health and function: a report from the Adult Dental Health Survey 2009* estimates of the prevalence of good periodontal health are presented; this report extends this discussion further and considers the pattern of periodontal diseases.

The soft tissue and bone supporting teeth are vital to maintaining a functioning dentition. It is currently thought that plaque-induced gingivitis and periodontitis are a continuum of the same chronic inflammatory condition that affects the supporting structures of the teeth. While individual susceptibility to both gingivitis and periodontitis varies it is acknowledged that gingivitis precedes periodontitis<sup>1</sup>. The measurement of periodontal disease is only applicable to adults who have some teeth i.e. are dentate, and so, as with all of the other measures of oral health and disease, the data reported here relate to the dentate population only.

As with dental caries, the effects of periodontal diseases are generally cumulative. When the attachment between bone and tooth is lost it usually does not re-form to any great degree. The markers of periodontal diseases that are included in this section are gingival bleeding, periodontal pocketing and loss of periodontal attachment. The former generally indicates some level of gingival inflammation and in the absence of any other markers can relate to very mild disease. The latter two markers relate to a more advanced disease process, reflecting the damage already done to the gums and often also indicating current disease.

The progressive loss of the supporting structures of the teeth, which can ultimately lead to looseness and loss of the tooth if untreated, is the most important manifestation of periodontal diseases. There are two ways of assessing this, both of which are useful; one is to measure the depth of the pockets which form between the inflamed gum and the tooth when the attachment to the tooth is lost. The second measure, known as loss of attachment, involves measuring the distance between the point on the root where the attachment starts and where it should be in complete health (at the neck of the tooth).

The diagnosis of disease was made by examination of predetermined sites around the mouth with a periodontal probe. The sites were the same as those recorded in 1998. However, loss of periodontal attachment was only recorded in older adults (those aged 55 and above). The periodontal examination is perhaps one of the more difficult parts of the examination for the examining dentists, particularly in the challenging field conditions of the survey. Where pockets are measured or bleeding observed the examiner can generally be confident that the observation indicates that disease and/or inflammation are present. However, pockets and loss of attachment may be difficult to detect and bleeding may not always be obvious, so false negatives are very much more likely than false positives. In other words the periodontal examination in a field survey is always likely to underestimate rather than overestimate the prevalence of the condition. This difficulty in measurement may affect actual prevalence estimates and possibly geographical variation but should not affect the findings as they apply to other measures of the distribution of the disease across the population or the comparison with previous surveys.



## 2.2.1 Gingival bleeding

Gingival bleeding on probing is one of the signs of plaque-induced gingivitis; when present it suggests active gingival disease and as such is an important indicator of gum disease. Bleeding will be found at any stage of disease, whether there has been destruction of the periodontal support or not. Just over half the dentate adult population (54 per cent) demonstrated gingival bleeding. The proportion of dentate adults with gingival bleeding varied between age-groups although there was no clear pattern; for example, gingival bleeding peaked among adults aged 45 to 54 (59 per cent) compared with 49 per cent amongst dentate adults aged 65 to 74. Men were more likely than women to have some gingival bleeding, 56 per cent compared with 52 per cent, and although there were no significant differences between adults in England, Wales and Northern Ireland, the proportion of adults with this sort of bleeding varied between the English SHAs. For example, 64 per cent of adults in South Central SHA had gingival bleeding compared with 32 per cent of adults in East of England SHA. The lower value for East of England could reflect inter-examiner variation (an under recording of disease) rather than a difference in the pattern of disease. Finally, the proportion of adults with gingival bleeding also varied by socio-economic classification of the household; just under half (49 per cent) of adults from managerial and professional occupation households were affected, compared with 59 per cent of those from routine and manual occupation households.

*Table 2.2.1*

The experience of gingival bleeding also varied between different patterns of dental attendance and behaviour. For example, 49 per cent of adults who said that they attended the dentist for a regular check-up had any gingival bleeding compared with 64 per cent of those who only attended the dentist when they had trouble with their teeth. Similarly, whereas just over half (51 per cent) of those adults who said that they had attended the dentist in the previous 12 months had any bleeding, 66 per cent of those who had not been to the dentist in over ten years did. In terms of self-directed dental hygiene behaviour there was a 34 percentage point difference in the prevalence of gingival bleeding between adults who said that they brushed their teeth at least twice a day (51 per cent) and those who said they never brushed their teeth (85 per cent). A greater proportion of current smokers had gingival bleeding (58 per cent) than those adults who used to smoke (50 per cent).

*Table 2.2.2*

Finally, the presence of both plaque and calculus also varied according to whether or not adults had any gingival bleeding. Table 2.2.2 shows that 65 per cent of adults with visible plaque had gingival bleeding compared with only 33 per cent of adults who had no plaque. A similar pattern was observed for calculus; 67 per cent of adults with calculus had gingival bleeding compared with 26 per cent of adults with no calculus. Plaque and calculus are risk factors for gum disease and they are considered in more detail in *Preventive behaviour and risks to oral health: a report from the Adult Dental Health Survey 2009*

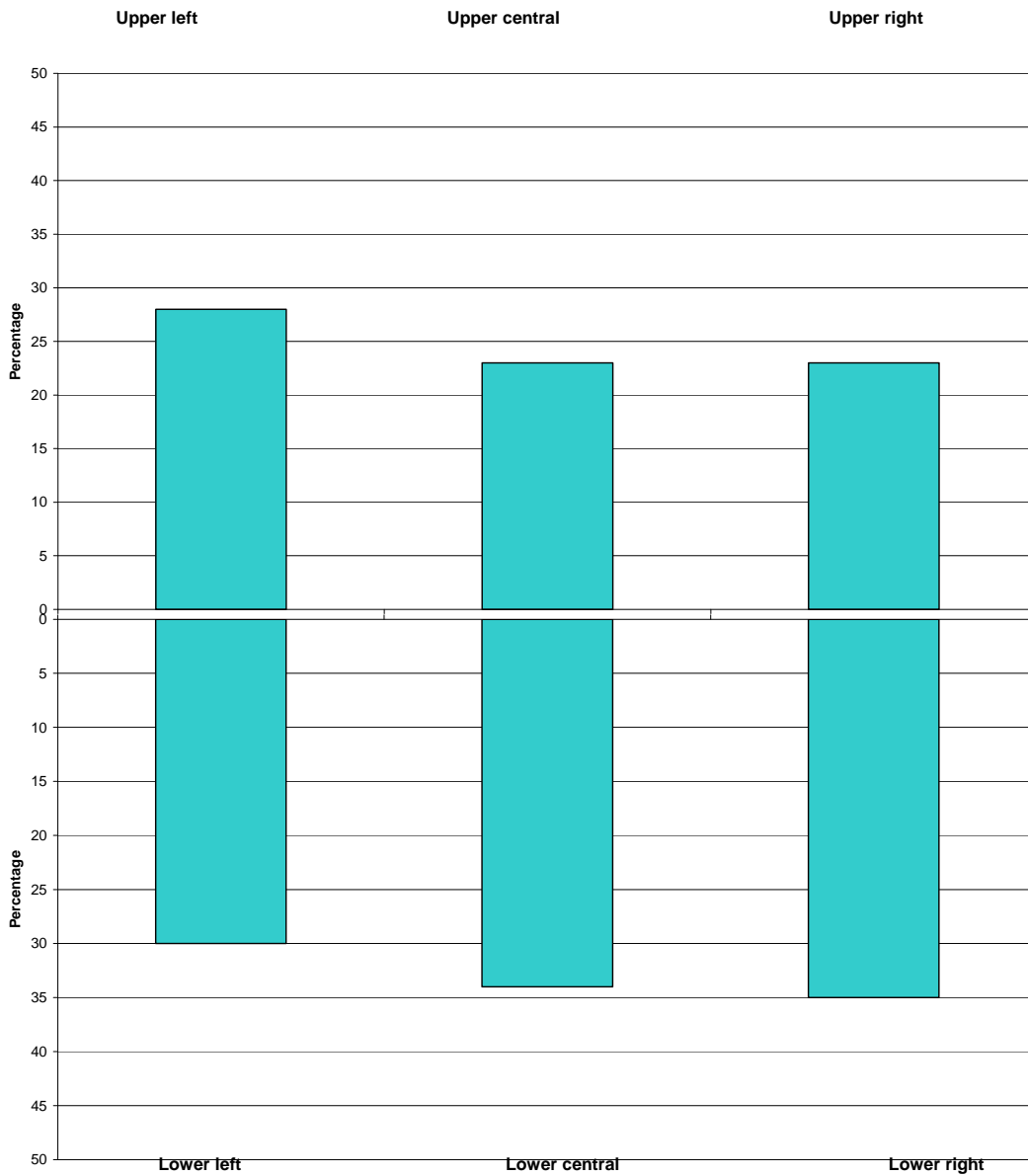
*Table 2.2.2*

It is possible to look at the pattern of bleeding in different sites around the mouth. Figure 2.2.1 and Table 2.2.3 show that there is a fairly even distribution of bleeding across all sextants. In the upper arch between 23 per cent and 28 per cent of sextants were affected by gingival bleeding whereas a slightly higher proportion (30 per cent to 35 per cent) affected the sextants in the lower arch.

*Figure 2.2.1 and Table 2.2.3*



**Figure 2.2.1 Percentage of sextants containing teeth with bleeding**



## 2.2.2 Periodontal pocketing

The measurement of periodontal pocketing is a useful indicator of treatment options; however, the presence of pocketing up to 3.5mm is regarded as generally healthy. In the clinical examination carried out for the present survey, pockets deeper than this were recorded to give an indication of disease and are reported here at thresholds of 4mm, 6mm and 9mm. In Table 2.2.1 pocketing above 4mm or more includes all pocketing above 6mm and 9mm also. It is possible to classify pocketing as mild, moderate and severe; mild periodontal pocketing reflects pocketing between 4mm and 6mm, moderate between 6mm and 9mm, and severe above 9mm. Estimates for mild, moderate and severe pocketing are presented below in Table 2.

Overall 45 per cent of dentate adults had evidence of any pocketing indicating some level of current or historical periodontitis. The majority of this disease (37 per cent) is between 4mm and 6mm (see Table 2), indicating mild levels of disease. Eight per cent of dentate adults in the general population had pocketing above 6mm, and 7 per cent had moderate disease with pocketing between 6mm and 9 mm (see Table 2). A further 1 per cent of dentate adults had severe pocketing at 9 mm or more (see Table 2). These are likely underestimates of the true prevalence, for the reasons outlined above, but still indicate that periodontitis is widespread in the population.

*Table 2 and Table 2.2.1*

**Table 2 Extent of pocketing in dentate adults**

<i>England, Wales, Northern Ireland: 2009</i>	
	<b>Dentate adults</b>
	%
No pocketing	55
Pocketing 4mm - 5.5 mm	37
Pocketing 6 mm - 8.5 mm	7
Pocketing 9 mm and over	1
<i>Unweighted base</i>	<i>6,400</i>
<i>Weighted base (000s)</i>	<i>42,676</i>

As expected, given the cumulative effects of periodontal diseases, the prevalence of any periodontal pocketing varied by age. For example, 19 per cent of 16 to 24 year olds had some pocketing over 4mm, compared with just over three-fifths (61 per cent) of adults aged 75 to 84, and this despite older age groups having fewer teeth overall. This pattern held for pocketing above 6mm and 9mm also. A greater proportion of men than women had periodontal disease above 4mm (47 per cent compared with 43 per cent) and above 6mm (10 per cent compared with 7 per cent) but not above 9mm (the small difference was not significant). Finally, although there was no overall relationship between socio-economic classification of the household and any pocketing above 4mm, a larger proportion of adults from routine and manual occupation households had pocketing above 6mm than adults from professional and managerial occupation households (11 per cent compared with 7 per cent).

*Table 2.2.1*

Managing and preventing periodontal diseases in people at risk of developing these diseases generally relies on professional diagnosis, review and good personal cleaning habits. In terms of self-directed behavioural characteristics, Table 2.2.2 demonstrates that those adults who only attended the dentist when they have trouble with their teeth were more likely to have any periodontal pocketing above 4mm than adults who attended for an occasional check-up. In addition, those adults who said that they went for regular check-ups had a smaller proportion of pocketing above 6mm and 9mm (7 per cent and 1 per cent respectively) than those adults who only went to the dentist when they were having trouble with their teeth (11 per cent and 2 per cent respectively). Table 2.2.2 shows that time since last dental visit was also associated with extent of periodontal pocketing. For example, 44 per cent of adults who had been to the dentist in the previous 12 months had any periodontal pocketing (above 4 mm) while almost three-fifths (58 per cent) of those who had not been for over ten years had pocketing above 4mm. This pattern held for both other thresholds.

*Table 2.2.2*

Table 2.2.2 also shows that the prevalence of pocketing varied in terms of the frequency of teeth cleaning and smoking behaviour. A greater proportion of adults who reported that they brushed their teeth never or less frequently than once a day had periodontal pocketing above 4mm (65 per cent), above 6mm (17 per cent) and above 9mm (7 per cent) than those who reported twice daily brushing (43 per cent, 7 per cent and 1 per cent respectively). Regular cleaning clearly is associated with a much reduced risk of significant disease across the population. Finally, as for gingival bleeding the presence of plaque and calculus also varied in terms of the presence of absence of pocketing at all three levels; 51 per cent of adults with visible plaque and 54 per cent with visible calculus had pocketing above 4mm, compared with 34 per cent and 27 per cent of adults with no plaque or calculus respectively.

*Table 2.2.2*

The prevalence of disease simply indicates that a person has one or more affected teeth, but the impact of periodontal disease will depend also on how widespread it is around the mouth. The extent of pocketing as an indicator of periodontal disease was recorded by splitting the mouth into six sections (sextants) and calculating the number of sextants affected. Amongst those with some pocketing of 4mm or more, the mean number of sextants affected was 2.7, however this varied with age, although the pattern was not very clear. For example, adults aged 16 to 24 and 75 to 84 had 2.4 sextants affected by pocketing above 4mm compared with 2.8 sextants in adults in the four age groups 25 to 34, 35 to 44, 45 to 54, and 55 to 64. However, with increasing age the number of teeth (and therefore the number of sextants) would be expected to reduce, and with increasing age the disease affects a steadily increasing proportion of the remaining sextants.

*Table 2.2.4*

### **2.2.3 Periodontal loss of attachment**

Loss of attachment (LOA) is an indication of damage over a lifetime and takes into account gum recession (which will often occur alongside pocketing). It is therefore a better indicator of the life course effects of disease. This measurement, as explained above, was taken in adults over the age of 55 in this survey. As with periodontal pocketing, the worst score for each sextant was recorded and the thresholds of 4mm, 6mm and 9mm were used.

Overall, 66 per cent of adults aged 55 and above had LOA of 4mm or more, 21 per cent had LOA above 6mm and 4 per cent above 9mm. At all three levels of LOA the proportion

increased with age; for example, 61 per cent of those aged 55 to 64 had LOA above 4mm compared with 76 per cent of adults aged 75 to 84; 18 per cent of 55 to 64 year olds had LOA above 6mm compared with 25 per cent of 75 to 84 year olds; and finally 2 per cent aged 55 to 64 had LOA above 9mm compared with 5 per cent aged 75 and 84. Men were more likely than women to have LOA above 4mm (72 per cent compared with 60 per cent) and above 6mm (24 per cent compared with 18 per cent), but not for LOA exceeding 9mm (the apparent difference is not significant).

*Table 2.2.5*

## 2.2.4 Trends in periodontal condition

As with other trend data, the calculations have been made for data from England only, in view of the larger sample size and need for backward compatibility.

The periodontal sites examined in 2009 were the same as those examined in 1998 and the same basic probe, equipment and criteria were used. Clearly, different examiners undertook the examination itself so there is the scope for variation in examining practices, but the training process was essentially identical. Notwithstanding the risks of examiner variation between the two groups with eleven years between the two surveys, and the scope for random error which occurs in all such data (each percentage will have a margin of error of a few percentage points), some consistent changes have been observed.

Since 1998 there has been an overall reduction in the prevalence of pocketing at 4mm or more from 55 per cent down to 45 per cent signifying an overall reduction in disease. This was apparent in almost all age categories. However, for both higher thresholds (pockets of 6mm or more and 9mm or more) no decline in prevalence was observed between 1998 and 2009, in fact for pocketing at 6mm an overall increase from 6 per cent to 9 per cent in 2009 was observed.

*Table 2.2.6*

The reduction in pocketing above 4mm but not in pocketing above 6mm and 9mm does not suggest a general change in the ability of examiners to detect disease, but a more complex and real change in the pattern of occurrence. Any explanation would be speculative but the general improvement is in line with the changes in the prevalence of plaque (*see Preventive behaviour and risks to oral health: a report from the Adult Dental Health survey 2009*), whilst it is possible that the increase in deep pockets simply reflects a greater retention of teeth with periodontal disease which may have been removed in previous generations.

## 2.3 Tooth wear

### Introduction

This assessment provides an overview of tooth surface loss (wear) from causes other than tooth-decay. Teeth wear away as a natural part of life so the extent and severity of wear is age related. The wear can happen in a range of ways; the tooth tissue can dissolve as a result of exposure to dietary or other acids, they can be worn away by contact with something else (such as a toothbrush and abrasive paste) or the two arches of teeth grind against each other and can be worn away. Typically, these processes all occur together, but the overall result is loss of tooth tissue with a change in the shape and form of the tooth. Whilst wear is a natural process, sometimes it can be rapid and destructive and demands treatment.

The measurement of tooth wear was carried out for the first time in the 1998 ADHS and the same coding criteria were used in the 2009 survey. Wear was recorded for the three surfaces of the six upper anterior teeth, buccal (outward surface), palatal (inward surface) and incisal (cutting edge). The worst affected surface of each of the six lower anterior teeth was also recorded.

Wear was assessed on the surfaces indicated above as:

- no obvious wear or wear restricted only to the enamel of the tooth
- loss of enamel just exposing dentine somewhere on the surface
- more extensive exposure of dentine (more than one third of the buccal or palatal surface) or substantial loss of dentine (incisal surface)
- complete enamel loss with exposure of dental pulp or secondary dentine.

In this report, prevalence of wear is reported and outlined at three thresholds; any wear, wear that has exposed a large area of dentine on any surface (moderate wear) and wear that has exposed the pulp or secondary dentine (severe wear).

### 2.3.1 Prevalence of tooth wear

Overall, the prevalence of tooth wear extending into dentine was high, with over three-quarters (77 per cent) of dentate adults showing some tooth wear in their anterior teeth. Overall, 15 per cent showed moderate wear and 2 per cent severe wear. The damage from wear is cumulative, so the prevalence of any wear and the two specific levels of severity increased with age; for example 52 per cent of adults aged 16 to 24 had any wear compared with 95 per cent of 75 to 84 year olds. Similarly, 4 per cent of adults aged 16 to 24 had moderate wear whereas 44 per cent of 75 to 84 year olds showed moderate wear; less than 0.5 per cent of the youngest adults had severe wear compared with 6 per cent of adults aged 75 to 84 having severe wear. Given the fact that tooth wear is a natural process, the high prevalence of moderate wear in the older age groups is of less concern than the finding that a proportion of the younger age groups were also affected with moderate and severe wear.

*Table 2.3.1*

Table 2.3.1 shows that men had a higher prevalence of wear than women; for example, 82 per cent of men had any wear and 19 per cent moderate wear compared with 73 per cent and 11 per cent respectively for women; men also had significantly more severe wear than women. Geographical variations in wear are also apparent from Table 2.3.1 with a greater proportion of adults in Northern Ireland having any wear (88 per cent) than adults in England

(77 per cent); 87 per cent of adults in Wales had any wear. Wear also varied between English SHAs; the highest rate of any wear was observed in the West Midlands SHA (93 per cent), whereas the lowest was in the South East Coast SHA (66 per cent).

*Table 2.3.1*

In terms of reported dental attendance, there were only significant differences in the prevalence of severe tooth wear and reported time since last dental visit; 2 per cent of adults who attended less than a year ago had severe wear compared with 6 per cent who attended more than 10 years ago. Table 2.3.2 also shows that there were differences between adults reporting that they brushed their teeth with more or less frequency in terms of moderate and severe wear. For example, the lowest rate of moderate wear was observed among adults who reported brushing their teeth twice a day or more (14 per cent), whereas the highest was observed among those who either said they brushed their teeth once a day or that they never brushed their teeth (18 per cent respectively). Finally, there was also significant variation in wear associated with smoking but no clear relationship emerged.

*Table 2.3.2*

There is no hard and fast rule about when tooth wear needs intervention, whether preventive strategies or treatment to restore lost tissue, but the occurrence of abnormally high levels of wear affecting several teeth in relation to the age cohort is of importance. Table 2.3.3 identifies those with moderate wear. The average number of teeth affected amongst those with moderate wear was 3.1 and the overall proportion of teeth affected was 30 per cent; this varied with age.

*Table 2.3.3*

## 2.3.2 Trends in tooth wear

The prevalence of tooth wear in England has increased since the 1998 survey, when two thirds (66 per cent) of the dentate population showed signs of wear compared with over three quarters (76 per cent) in this survey. There have also been small increases in the proportion of adults with moderate wear, 11 per cent in 1998 compared with 15 per cent in 1998.

However, the increase is not uniform across the age groups. The proportion of adults with any tooth wear has increased for all age groups except those over 75 years and over. The greatest increase was in the youngest three age groups; 15 percentage points, 10 percentage points and 13 percentage points for those aged 16 to 24, 25 to 34 and 35 to 44 years respectively. For adults under the age of 65 moderate and severe tooth wear has increased since 1998, but for those aged 65 and over, there has been a small decrease. While the increase in moderate tooth wear is small, moderate tooth wear in 16 to 34 year olds is of clinical relevance as it is suggestive of rapid tooth wear.

*Table 2.3.4*

## Conclusion

Several diseases and processes are a threat to the retention of natural teeth for a lifetime. Dental caries has traditionally been the greatest threat to natural teeth and is still prevalent in the population. Almost a third of the population showed caries at the time of the examination and this represents many millions of people with decay detectable in field conditions. Whilst the younger age groups have the most people with good oral health (see *Oral health and function: a report from the Adult Dental Health Survey 2009*), they also have a higher prevalence of caries and are substantially more likely to have multiple sites with decay. There is also a significant social gradient for caries, however, it is still a common disease in all social groups, and there are clear associations with a range of health behaviours, including attendance, tooth cleaning and smoking.

Despite the relative abundance of disease detected, and the clear history of previous disease in the form of fillings and other restorations, particularly for older age groups (see *Complexity and maintenance: a report from the Adult Dental Health Survey 2009*), the trend is of a continued reduction over time.

Periodontal disease remains common at a low level although overall there has been a reduction in mild disease associated, perhaps, with a general increase in cleanliness. However, there has been a slight increase in the prevalence of more severe disease and the impacts of severe disease are concentrated in a relatively small proportion of the population. The associations with a range of health behaviours (for example, smoking or infrequent tooth brushing) are perhaps expected but the social gradient is relatively minor.

Severe wear remains rare, but there are signs of an increase since the last survey and there are a small but increasing proportion of younger adults with moderate wear which is likely to be clinically important.

# Notes and References

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<sup>1</sup> Kinane DF, Attström R (2005) Advances in the pathogenesis of periodontitis Group B consensus report of the fifth European workshop in periodontology *J Clin Periodontol* 32 (Suppl. 6) 130-131



# Tables

## Presentation of data

- Figures are rounded to the nearest whole value. This could have an impact on row or column percentages which may add to 99 per cent or 101 per cent.
- Where “0 per cent” is shown in a table, this indicates that fewer than 0.5 per cent of people gave this answer. Instances where no answers for a particular response were given are indicated in the tables by '-'.
- A few respondents did not answer some questions. These ‘*no answers*’ have been excluded from the analysis. Tables that describe the same population have slightly varying bases.
- The individual figures for unweighted sample sizes are rounded to the nearest 10 cases and may not add up to the figures shown in the totals.
- Small bases are associated with relatively high sampling errors and this affects the reliability of estimates. In general, percentage distribution is shown if the base is 30 or more. Where estimates are considered unreliable due to relatively high sampling error, figures in the tables are presented with a turquoise shaded background.

**Table 2.1.1 Percentage with any carious teeth by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Percentage with any carious teeth (crowns and roots)</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
<b>All</b>	31	6,470	42,918	
<b>Age</b>				
16-24	30	650	6,724	
25-34	37	910	7,090	
35-44	30	1,280	8,509	
45-54	27	1,200	7,198	
55-64	29	1,160	6,448	
65-74	27	810	4,109	
75-84	40	390	2,347	
85 and over	33	80	494	
<b>Sex</b>				
Men	34	2,960	21,069	
Women	28	3,510	21,849	
<b>Country</b>				
England	30	5,620	39,420	
Wales	47	410	2,204	
Northern Ireland	28	430	1,295	
<b>English Strategic Health Authority</b>				
North East	34	570	1,924	
North West	30	600	5,218	
Yorkshire & The Humber	30	500	3,912	
East Midlands	32	710	3,382	
West Midlands	39	490	3,973	
East Of England	23	650	4,452	
London	28	400	6,016	
South East Coast	21	450	3,314	
South Central	29	610	3,204	
South West	36	660	4,026	
<b>Socio-economic classification of household <sup>1</sup></b>				
Managerial and professional occupations	26	2,590	16,923	
Intermediate occupations	31	1,180	7,797	
Routine and manual occupations	37	2,020	13,612	

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.2 Percentage with any carious teeth by reported dental attendance and behaviour**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>		
<b>Reported dental behaviour</b>	<b>Percentage with any carious teeth (crowns and roots)</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
All	31	6,470	42,918	
<b>Dental attendance</b>				
Regular check up	22	4,380	26,817	
Occasional check up	31	550	4,278	
Only with trouble	50	1,450	11,063	
Never goes to the dentist	48	80	710	
<b>Time since last dental visit <sup>1</sup></b>				
Less than 1 year	25	4,960	31,309	
Between 1 and 5 years	41	970	7,393	
Over 5 up to 10 years	57	260	2,068	
Over 10 years	59	200	1,425	
<b>Frequency of teeth cleaning</b>				
Twice a day or more	27	4,820	31,782	
Once a day	36	1,450	9,704	
Never/less than once a day	67	180	1,425	
<b>Fluoride in toothpaste <sup>2</sup></b>				
1350-1500 <sup>3</sup>	31	4,350	28,373	
1000-1350 <sup>3</sup>	30	1,060	6,869	
550 or less or none <sup>3</sup>	28	350	2,167	
<b>Smoking</b>				
Currently smoke	44	1,270	8,937	
Ex-smoker	27	2,240	14,186	
Never smoked	28	2,960	19,734	
<b>Diet</b>				
High Sugar <sup>4</sup>	69	3,260	21,568	
Not High Sugar	70	3,210	21,350	

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week  
Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.3 Mean number of carious teeth by characteristics of dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Mean number of carious teeth*</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	0.8	6,470	42,918
<b>Age</b>			
16-24	0.9	650	6,724
25-34	1.1	910	7,090
35-44	0.7	1,280	8,509
45-54	0.7	1,200	7,198
55-64	0.8	1,160	6,448
65-74	0.7	800	4,109
75 and over	0.9	470	2,840
<b>Sex</b>			
Men	1.0	2,960	21,069
Women	0.6	3,510	21,849
<b>Country</b>			
England	0.8	5,620	39,420
Wales	1.1	410	2,204
Northern Ireland	0.7	430	1,295
<b>English Strategic Health Authority</b>			
North East	1.1	570	1,924
North West	0.9	600	5,218
Yorkshire & The Humber	0.9	500	3,912
East Midlands	0.8	710	3,382
West Midlands	1.0	490	3,973
East Of England	0.5	650	4,452
London	0.7	400	6,016
South East Coast	0.6	450	3,314
South Central	0.7	610	3,204
South West	1.1	660	4,026
<b>Socio-economic classification of household<sup>1</sup></b>			
Managerial and professional occupations	0.6	2,590	16,923
Intermediate occupations	0.8	1,180	7,797
Routine and manual occupations	1.2	2,020	13,612

\* Includes coronal and root caries

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.4 Mean number of carious teeth by characteristics of dentate adults with at least one carious tooth**

<i>Dentate adults with at least one carious tooth</i>		<i>England, Wales, Northern Ireland: 2009</i>	
<b>Characteristics of dentate adults</b>	<b>Mean number of carious teeth<sup>*</sup></b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	2.7	1,960	13,204
<b>Age</b>			
16-24	2.9	200	2,005
25-34	3.1	340	2,620
35-44	2.3	390	2,563
45-54	2.7	320	1,960
55-64	2.7	330	1,868
65-74	2.6	200	1,099
75 and over	2.4	180	1,091
<b>Sex</b>			
Men	3.0	1,010	7,187
Women	2.4	950	6,017
<b>Country</b>			
England	2.7	1,660	11,804
Wales	2.4	190	1,033
Northern Ireland	2.4	110	367
<b>English Strategic Health Authority</b>			
North East	3.2	190	646
North West	3.0	180	1,588
Yorkshire & The Humber	3.0	140	1,182
East Midlands	2.6	220	1,085
West Midlands	2.6	180	1,558
East Of England	2.2	150	1,015
London	2.5	110	1,686
South East Coast	2.9	80	681
South Central	2.3	170	920
South West	3.2	230	1,443
<b>Socio-economic classification of household<sup>1</sup></b>			
Managerial and professional occupations	2.2	660	4,324
Intermediate occupations	2.5	360	2,390
Routine and manual occupations	3.2	740	5,077

\* Includes coronal and root caries

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.5 Mean number of carious teeth by reported dental attendance and behaviour of dentate adults with at least one carious tooth**

<i>Dentate adults with at least one carious tooth</i>		<i>England, Wales, Northern Ireland: 2009</i>	
<b>Characteristics of dentate adults</b>	<b>Mean number of carious teeth<sup>*</sup></b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	2.7	1,960	13,204
<b>Dental attendance</b>			
Regular check up	2.1	1,000	5,966
Occasional check up	2.4	170	1,327
Only with trouble	3.3	750	5,544
Never goes to the dentist	5.2	40	343
<b>Time since last dental visit<sup>1</sup></b>			
Less than 1 year	2.3	1,230	7,778
Between 1 and 5 years	2.9	420	3,055
Over 5 up to 10 years	3.2	160	1,178
Over 10 years	4.6	120	840
<b>Frequency of teeth cleaning</b>			
Twice a day or more	2.2	1,320	8,733
Once a day	3.3	520	3,498
Never/less than once a day	5.0	120	888
<b>Fluoride in toothpaste<sup>2</sup></b>			
1350-1500 <sup>3</sup>	2.7	1,310	8,689
1000-1350 <sup>3</sup>	2.3	320	2,035
550 or less or none <sup>3</sup>	2.8	110	605
<b>Smoking</b>			
Currently smoke	3.5	570	3,950
Ex-smoker	2.3	600	3,777
Never smoked	2.4	790	5,465
<b>Diet</b>			
High Sugar <sup>4</sup>	2.8	1,010	6,775
Not High Sugar	2.6	950	6,429

\* Includes coronal and root caries

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded.

<sup>3</sup> Parts per million.

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.6 Percentage with primary or secondary caries by characteristics of dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Percentage with primary or secondary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	29	6,470	42,918
<b>Age</b>			
16-24	30	650	6,724
25-34	36	910	7,090
35-44	30	1,280	8,509
45-54	26	1,200	7,198
55-64	26	1,160	6,448
65-74	22	810	4,109
75-84	35	390	2,347
85 and over	28	80	494
<b>Sex</b>			
Men	32	2,960	21,069
Women	26	3,510	21,849
<b>Country</b>			
England	28	5,620	39,420
Wales	43	410	2,204
Northern Ireland	27	430	1,295
<b>English Strategic Health Authority</b>			
North East	33	570	1,924
North West	28	600	5,218
Yorkshire & The Humber	28	500	3,912
East Midlands	31	710	3,382
West Midlands	35	490	3,973
East Of England	22	650	4,452
London	27	400	6,016
South East Coast	20	450	3,314
South Central	28	610	3,204
South West	34	660	4,026
<b>Socio-economic classification of household <sup>1</sup></b>			
Managerial and professional occupations	24	2,590	16,923
Intermediate occupations	28	1,180	7,797
Routine and manual occupations	36	2,020	13,612

\* caries lesions into coronal dentine

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.7 Percentage with primary or secondary caries by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
<b>Reported dental behaviour</b>	<b>Percentage with primary or secondary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	29	6,470	42,918
<b>Dental attendance</b>			
Regular check up	20	4,380	26,817
Occasional check up	30	550	4,278
Only with trouble	49	1,450	11,063
Never goes to the dentist	47	80	710
<b>Time since last dental visit <sup>1</sup></b>			
Less than 1 year	23	4,960	31,309
Between 1 and 5 years	40	970	7,393
Over 5 up to 10 years	56	260	2,068
Over 10 years	58	200	1,425
<b>Frequency of teeth cleaning</b>			
Twice a day or more	26	4,820	31,782
Once a day	34	1,450	9,704
Never/less than once a day	65	180	1,425
<b>Fluoride in toothpaste <sup>2</sup></b>			
1350-1500 <sup>3</sup>	29	4,350	28,373
1000-1350 <sup>3</sup>	28	1,060	6,869
550 or less or none <sup>3</sup>	26	350	2,167
<b>Smoking</b>			
Currently smoke	43	1,270	8,937
Ex-smoker	25	2,240	14,186
Never smoked	26	2,960	19,734
<b>Diet</b>			
High Sugar <sup>4</sup>	30	3,260	21,568
Not High Sugar	28	3,210	21,350

\* caries lesions into coronal dentine

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.



**Table 2.1.8 Percentage with primary caries by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Percentage with primary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
<b>All</b>	23	6,470	42,918	
<b>Age</b>				
16-24	28	650	6,724	
25-34	33	910	7,090	
35-44	24	1,280	8,509	
45-54	18	1,200	7,198	
55-64	18	1,160	6,448	
65-74	14	810	4,109	
75-84	22	390	2,347	
85 and over	19	80	494	
<b>Sex</b>				
Men	25	2,960	21,069	
Women	21	3,510	21,849	
<b>Country</b>				
England	23	5,620	39,420	
Wales	33	410	2,204	
Northern Ireland	20	430	1,295	
<b>English Strategic Health Authority</b>				
North East	27	570	1,924	
North West	23	600	5,218	
Yorkshire & The Humber	24	500	3,912	
East Midlands	26	710	3,382	
West Midlands	28	490	3,973	
East Of England	15	650	4,452	
London	20	400	6,016	
South East Coast	16	450	3,314	
South Central	24	610	3,204	
South West	27	660	4,026	
<b>Socio-economic classification of household <sup>1</sup></b>				
Managerial and professional occupations	19	2,590	16,923	
Intermediate occupations	22	1,180	7,797	
Routine and manual occupations	27	2,020	13,612	

\*Primary caries lesions into coronal dentine

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.9 Percentage with primary caries by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>		
<b>Reported dental behaviour</b>	<b>Percentage with primary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
<b>All</b>	23	6,470	42,918	
<b>Dental attendance</b>				
Regular check up	15	4,380	26,817	
Occasional check up	25	550	4,278	
Only with trouble	40	1,450	11,063	
Never goes to the dentist	43	80	710	
<b>Time since last dental visit <sup>1</sup></b>				
Less than 1 year	18	4,960	31,309	
Between 1 and 5 years	32	970	7,393	
Over 5 up to 10 years	47	260	2,068	
Over 10 years	47	200	1,425	
<b>Frequency of teeth cleaning</b>				
Twice a day or more	20	4,820	31,782	
Once a day	27	1,450	9,704	
Never/less than once a day	56	180	1,425	
<b>Fluoride in toothpaste <sup>2</sup></b>				
1350-1500 <sup>3</sup>	23	4,350	28,373	
1000-1350 <sup>3</sup>	22	1,060	6,869	
550 or less or none <sup>3</sup>	22	350	2,167	
<b>Smoking</b>				
Currently smoke	34	1,270	8,937	
Ex-smoker	19	2,240	14,186	
Never smoked	21	2,960	19,734	
<b>Diet</b>				
High Sugar <sup>4</sup>	23	3,260	21,568	
Not High Sugar	23	3,210	21,350	

\*Primary caries lesions into coronal dentine

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.10 Extent of primary caries by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>					
<b>Characteristics of dentate adults</b>		<b>Number of teeth with primary caries</b>				<b>Unweighted base</b>	<b>Weighted base (000s)</b>
		<b>None</b>	<b>1</b>	<b>2</b>	<b>3 or more</b>		
<b>All</b>	%	77	12	5	6	6,470	42,918
<b>Age</b>							
16-24	%	72	11	8	9	650	6,724
25-34	%	67	14	7	11	910	7,090
35-44	%	76	13	6	5	1,280	8,509
45-54	%	82	11	4	4	1,200	7,198
55-64	%	82	11	3	4	1,160	6,448
65-74	%	86	9	3	2	810	4,109
75-84	%	78	14	5	3	390	2,347
85 and over	%	81	14	3	2	80	494
<b>Sex</b>							
Men	%	75	12	6	8	2,960	21,069
Women	%	79	12	4	4	3,510	21,849
<b>Country</b>							
England	%	77	12	5	6	5,620	39,420
Wales	%	67	17	8	7	410	2,204
Northern Ireland	%	80	12	4	4	430	1,295
<b>English Strategic Health Authority</b>							
North East	%	73	14	5	9	570	1,924
North West	%	77	10	6	7	600	5,218
Yorkshire & The Humber	%	76	11	5	8	500	3,912
East Midlands	%	74	14	7	5	710	3,382
West Midlands	%	72	14	8	6	490	3,973
East Of England	%	85	9	3	3	650	4,452
London	%	80	11	4	4	400	6,016
South East Coast	%	84	10	2	4	450	3,314
South Central	%	76	13	5	7	610	3,204
South West	%	73	13	6	8	660	4,026
<b>Socio-economic classification of household <sup>1</sup></b>							
Managerial and professional occupations	%	81	11	4	4	2,590	16,923
Intermediate occupations	%	78	13	4	5	1,180	7,797
Routine and manual occupations	%	73	12	7	8	2,020	13,612

\*Primary caries lesions into coronal dentine

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.11 Extent of primary caries by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>					
<b>Reported dental behaviour</b>		<b>Number of teeth with primary caries</b>				<b>Unweighted base</b>	<b>Weighted base (000s)</b>
		<b>None</b>	<b>1</b>	<b>2</b>	<b>3 or more</b>		
<b>All</b>	%	77	12	5	6	6,470	42,918
<b>Dental attendance</b>							
Regular check up	%	85	9	3	2	4,380	26,817
Occasional check up	%	75	13	6	7	550	4,278
Only with trouble	%	60	19	9	13	1,450	11,063
Never goes to the dentist	%	57	10	11	23	80	710
<b>Time since last dental visit <sup>1</sup></b>							
Less than 1 year	%	82	10	4	4	4,960	31,309
Between 1 and 5 years	%	68	16	8	9	970	7,393
Over 5 up to 10 years	%	53	21	12	14	260	2,068
Over 10 years	%	53	19	10	18	200	1,425
<b>Frequency of teeth cleaning</b>							
Twice a day or more	%	80	11	5	4	4,820	31,782
Once a day	%	73	13	5	9	1,450	9,704
Never/less than once a day	%	44	19	14	23	180	1,425
<b>Fluoride in toothpaste <sup>2</sup></b>							
1350-1500 <sup>3</sup>	%	77	12	5	6	4,350	28,373
1000-1350 <sup>3</sup>	%	78	12	4	6	1,060	6,869
550 or less or none <sup>3</sup>	%	78	12	5	5	350	2,167
<b>Smoking</b>							
Currently smoke	%	66	14	8	12	1,270	8,937
Ex-smoker	%	81	11	4	3	2,240	14,186
Never smoked	%	79	12	5	5	2,960	19,734
<b>Diet</b>							
High Sugar <sup>4</sup>	%	77	11	6	7	3,260	21,568
Not High Sugar	%	77	13	5	5	3,210	21,350

\*Primary caries lesions into coronal dentine

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.12 Percentage with secondary caries by characteristics of dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Percentage with secondary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	7	6,470	42,918
<b>Age</b>			
16-24	4	650	6,724
25-34	8	910	7,090
35-44	7	1,280	8,509
45-54	8	1,200	7,198
55-64	7	1,160	6,448
65-74	7	810	4,109
75-84	10	390	2,347
85 and over	6	80	494
<b>Sex</b>			
Men	8	2,960	21,069
Women	6	3,510	21,849
<b>Country</b>			
England	7	5,620	39,420
Wales	13	410	2,204
Northern Ireland	5	430	1,295
<b>English Strategic Health Authority</b>			
North East	7	570	1,924
North West	6	600	5,218
Yorkshire & The Humber	7	500	3,912
East Midlands	5	710	3,382
West Midlands	12	490	3,973
East Of England	4	650	4,452
London	5	400	6,016
South East Coast	3	450	3,314
South Central	6	610	3,204
South West	12	660	4,026
<b>Socio-economic classification of household <sup>1</sup></b>			
Managerial and professional occupations	5	2,590	16,923
Intermediate occupations	7	1,180	7,797
Routine and manual occupations	9	2,020	13,612

\*Secondary caries lesions into coronal dentine

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.13 Percentage with secondary caries by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>	
<b>Reported dental behaviour</b>	<b>Percentage with secondary caries *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	7	6,470	42,918
<b>Dental attendance</b>			
Regular check up	6	4,380	26,817
Occasional check up	8	550	4,278
Only with trouble	9	1,450	11,063
Never goes to the dentist	10	80	710
<b>Time since last dental visit <sup>1</sup></b>			
Less than 1 year	6	4,960	31,309
Between 1 and 5 years	9	970	7,393
Over 5 up to 10 years	9	260	2,068
Over 10 years	10	200	1,425
<b>Frequency of teeth cleaning</b>			
Twice a day or more	6	4,820	31,782
Once a day	8	1,450	9,704
Never/less than once a day	14	180	1,425
<b>Fluoride in toothpaste <sup>2</sup></b>			
1350-1500 <sup>3</sup>	7	4,350	28,373
1000-1350 <sup>3</sup>	7	1,060	6,869
550 or less or none <sup>3</sup>	8	350	2,167
<b>Smoking</b>			
Currently smoke	10	1,270	8,937
Ex-smoker	6	2,240	14,186
Never smoked	6	2,960	19,734
<b>Diet</b>			
High Sugar <sup>4</sup>	8	3,260	21,568
Not High Sugar	6	3,210	21,350

\*Secondary caries lesions into coronal dentine

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week  
Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.14 Extent of secondary caries by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>				
<b>Characteristics of dentate adults</b>		<b>Number of teeth with secondary caries*</b>			<b>Unweighted base</b>	<b>Weighted base (000s)</b>
		<b>None</b>	<b>1</b>	<b>2 or more</b>		
<b>All</b>	%	93	5	2	6,470	42,918
<b>Age</b>						
16-24	%	96	3	1	650	6,724
25-34	%	92	6	2	910	7,090
35-44	%	93	6	2	1,280	8,509
45-54	%	92	6	3	1,200	7,198
55-64	%	93	5	2	1,160	6,448
65-74	%	93	5	1	810	4,109
75-84	%	90	8	2	390	2,347
85 and over	%	94	6	-	80	494
<b>Sex</b>						
Men	%	92	6	2	2,960	21,069
Women	%	94	5	2	3,510	21,849
<b>Country</b>						
England	%	93	5	2	5,620	39,420
Wales	%	87	9	4	410	2,204
Northern Ireland	%	95	3	1	430	1,295
<b>English Strategic Health Authority</b>						
North East	%	93	6	1	570	1,924
North West	%	94	4	2	600	5,218
Yorkshire & The Humber	%	93	5	2	500	3,912
East Midlands	%	95	4	1	710	3,382
West Midlands	%	88	9	3	490	3,973
East Of England	%	96	3	1	650	4,452
London	%	95	4	1	400	6,016
South East Coast	%	97	2	1	450	3,314
South Central	%	94	5	1	610	3,204
South West	%	88	9	3	660	4,026
<b>Socio-economic classification of household <sup>1</sup></b>						
Managerial and professional occupations	%	95	4	1	2,590	16,923
Intermediate occupations	%	93	6	2	1,180	7,797
Routine and manual occupations	%	91	6	3	2,020	13,612

\*Secondary caries lesions into coronal dentine

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.15 Extent of secondary caries by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>				
Characteristics of dentate adults		Number of teeth with secondary caries*			Unweighted base	Weighted base (000s)
		None	1	2 or more		
All	%	93	5	2	6,470	42,918
<b>Dental attendance</b>						
Regular check up	%	94	5	1	4,380	26,817
Occasional check up	%	92	6	2	550	4,278
Only with trouble	%	91	7	3	1,450	11,063
Never goes to the dentist	%	90	6	4	80	710
<b>Time since last dental visit <sup>1</sup></b>						
Less than 1 year	%	94	5	2	4,960	31,309
Between 1 and 5 years	%	91	7	2	970	7,393
Over 5 up to 10 years	%	91	6	4	260	2,068
Over 10 years	%	90	7	3	200	1,425
<b>Frequency of teeth cleaning</b>						
Twice a day or more	%	94	5	1	4,820	31,782
Once a day	%	92	6	3	1,450	9,704
Never/less than once a day	%	86	8	6	180	1,425
<b>Fluoride in toothpaste <sup>2</sup></b>						
1350-1500 <sup>3</sup>	%	93	5	2	4,350	28,373
1000-1350 <sup>3</sup>	%	93	6	1	1,060	6,869
550 or less or none <sup>3</sup>	%	92	5	3	350	2,167
<b>Smoking</b>						
Currently smoke	%	90	7	3	1,270	8,937
Ex-smoker	%	94	5	1	2,240	14,186
Never smoked	%	94	5	2	2,960	19,734
<b>Diet</b>						
High Sugar <sup>4</sup>	%	92	6	2	3,260	21,568
Not High Sugar	%	94	5	1	3,210	21,350

\*Secondary caries lesions into coronal dentine

<sup>1</sup>Excludes people who had never been to dentist

<sup>2</sup>Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup>Parts per million

<sup>4</sup>Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

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**Table 2.1.16 Presence of active root caries and risk of root caries in dentate adults by age**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>								
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over	All
<b>Amongst all dentate adults</b>									
Percentage of people with any exposed (vulnerable) root surface <sup>1</sup>	31	53	72	88	95	96	98	97	73
Mean number of teeth with exposed (vulnerable) roots	2.1	3.9	6.4	9.4	11.1	11.8	10.7	10.9	7.3
Percentage of all teeth with exposed (vulnerable) roots	7	14	23	36	48	56	62	78	29
Percentage of people with roots with active <sup>2</sup> decay	1	3	4	8	11	10	20	17	7
Mean number of teeth with active <sup>2</sup> root decay	0.0	0.1	0.1	0.2	0.3	0.2	0.4	0.3	0.2
<i>Unweighted base</i>	650	910	1,280	1,200	1,160	810	390	80	6,470
<i>Weighted base (000s)</i>	6,724	7,090	8,509	7,198	6,448	4,109	2,347	494	42,918
<b>Amongst those with exposed (vulnerable) roots</b>									
Mean number of teeth with exposed (vulnerable) roots	6.9	7.4	8.9	10.7	11.7	12.3	10.9	11.2	10.1
Mean number of teeth with active <sup>2</sup> root decay	0.1	0.2	0.1	0.2	0.3	0.2	0.4	0.3	0.2
<i>Unweighted base</i>	200	500	950	1,050	1,090	770	390	80	5,020
<i>Weighted base (000s)</i>	2,059	3,776	6,133	6,311	6,125	3,952	2,303	480	31,140

<sup>1</sup> An exposed (vulnerable) surface is any where the gum has receded, the root surface may be in any condition (sound, decayed, filled or worn)

<sup>2</sup> Active decay, not including hard arrested decay

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.1.17 Percentage with roots with active decay by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>		
<b>Characteristics of dentate adults</b>	<b>Percentage with roots with active decay<sup>*</sup></b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
<b>All</b>	7	6,470	42,918	
<b>Age</b>				
16-24	1	650	6,724	
25-34	3	910	7,090	
35-44	4	1,280	8,509	
45-54	8	1,200	7,198	
55-64	11	1,160	6,448	
65-74	10	810	4,109	
75-84	20	390	2,347	
85 and over	17	80	494	
<b>Sex</b>				
Men	8	2,960	21,069	
Women	6	3,510	21,849	
<b>Country</b>				
England	7	5,620	39,420	
Wales	10	410	2,204	
Northern Ireland	5	430	1,295	
<b>English Strategic Health Authority</b>				
North East	7	570	1,924	
North West	9	600	5,218	
Yorkshire & The Humber	4	500	3,912	
East Midlands	6	710	3,382	
West Midlands	13	490	3,973	
East Of England	4	650	4,452	
London	5	400	6,016	
South East Coast	3	450	3,314	
South Central	4	610	3,204	
South West	11	660	4,026	
<b>Socio-economic classification of household<sup>1</sup></b>				
Managerial and professional occupations	5	2,590	16,923	
Intermediate occupations	7	1,180	7,797	
Routine and manual occupations	9	2,020	13,612	

\*Active decay, not including hard arrested decay

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

**Table 2.1.18 Percentage with roots with active decay by reported dental attendance and behaviour of dentate adults**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
<b>Reported dental behaviour</b>	<b>Percentage with roots with active decay *</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	7	6,470	42,918
<b>Dental attendance</b>			
Regular check up	6	4,380	26,817
Occasional check up	4	550	4,278
Only with trouble	10	1,450	11,063
Never goes to the dentist	13	80	710
<b>Time since last dental visit <sup>1</sup></b>			
Less than 1 year	6	4,960	31,309
Between 1 and 5 years	8	970	7,393
Over 5 up to 10 years	9	260	2,068
Over 10 years	21	200	1,425
<b>Frequency of teeth cleaning</b>			
Twice a day or more	5	4,820	31,782
Once a day	10	1,450	9,704
Never/less than once a day	26	180	1,425
<b>Fluoride in toothpaste <sup>2</sup></b>			
1350-1500 <sup>3</sup>	7	4,350	28,373
1000-1350 <sup>3</sup>	6	1,060	6,869
550 or less or none <sup>3</sup>	10	350	2,167
<b>Smoking</b>			
Currently smoke	12	1,270	8,937
Ex-smoker	7	2,240	14,186
Never smoked	5	2,960	19,734
<b>Diet</b>			
High Sugar <sup>4</sup>	7	970	21,568
Not High Sugar	6	5,500	21,350

\*Active decay, not including hard arrested decay

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

**Table 2.1.19 Percentage with dental caries by age: England 1998 and 2009**

<i>Dentate adults</i>				<i>England: 1998 and 2009</i>					
	1998			<i>Unweighted base</i>	2009				
	Percentage with primary or secondary caries	Percentage with primary caries	Percentage with secondary caries		Percentage with primary or secondary caries	Percentage with primary caries	Percentage with secondary caries	<i>Unweighted base</i>	<i>Weighted base (000s)</i>
<b>All</b>	46	38	15	2,190	28	23	7	5,620	39,420
<b>Age</b>									
16-24	47	44	11	250	29	27	4	550	6,122
25-34	56	51	16	520	35	32	7	800	6,624
35-44	40	33	13	450	29	23	7	1,090	7,787
45-54	44	32	19	420	25	18	8	1,050	6,601
55-64	41	31	12	260	25	17	7	1,030	5,964
65-74	40	31	15	210	21	14	7	700	3,731
75 and over	41	26	13	80	34	21	10	410	2,590

**Table 2.2.1 Periodontal condition by characteristics of dentate adults**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>						
<b>Characteristics of dentate adults</b>	<b>Any bleeding</b>	<b>Any pocketing 4mm or more</b>	<b>Any pocketing 6mm or more</b>	<b>Any pocketing 9mm or more</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>		
<b>All</b>	54	45	8	1	6,430	42,816		
<b>Age</b>								
16-24	50	19	1	-	640	6,724		
25-34	55	36	4	0	910	7,090		
35-44	53	43	7	1	1,280	8,509		
45-54	59	52	10	2	1,190	7,190		
55-64	58	61	16	3	1,140	6,407		
65-74	49	60	14	3	800	4,078		
75-84	51	61	14	2	380	2,334		
85 and over	47	47	14	-	80	483		
<b>Sex</b>								
Men	56	47	10	2	2,940	21,002		
Women	52	43	7	1	3,480	21,813		
<b>Country</b>								
England	54	45	9	1	5,580	39,329		
Wales	56	50	8	2	410	2,197		
Northern Ireland	64	38	4	-	430	1,290		
<b>English Strategic Health Authority</b>								
North East	61	43	12	2	560	1,915		
North West	51	43	7	1	590	5,200		
Yorkshire & The Humber	62	42	10	2	500	3,907		
East Midlands	60	44	8	1	710	3,377		
West Midlands	61	53	10	2	480	3,967		
East Of England	32	32	5	1	640	4,434		
London	49	46	10	1	400	6,016		
South East Coast	52	49	9	1	450	3,314		
South Central	64	39	6	1	600	3,194		
South West	57	59	11	2	660	4,005		
<b>Socio-economic classification of household <sup>1</sup></b>								
Managerial and professional occupations	49	43	7	1	2,580	16,898		
Intermediate occupations	54	47	9	2	1,180	7,788		
Routine and manual occupations	59	48	11	2	2,000	13,556		

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.2.2 Periodontal condition by reported dental attendance and behaviour**

<i>Dentate adults</i>		<i>England, Wales, Northern Ireland: 2009</i>					
<b>Reported dental behaviour</b>	<b>Any bleeding</b>	<b>Any pocketing 4mm or more</b>	<b>Any pocketing 6mm or more</b>	<b>Any pocketing 9mm or more</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>	
All	54	45	8	1	6,430	42,816	
<b>Dental attendance</b>							
Regular check up	49	44	7	1	4,360	26,783	
Occasional check up	56	42	9	1	550	4,278	
Only with trouble	64	50	11	2	1,430	10,995	
Never goes to the dentist	72	54	10	4	80	710	
<b>Time since last dental visit <sup>1</sup></b>							
Less than 1 year	51	44	8	1	4,930	31,252	
Between 1 and 5 years	61	46	10	2	960	7,376	
Over 5 up to 10 years	64	49	12	2	260	2,055	
Over 10 years	66	58	17	6	190	1,409	
<b>Frequency of teeth cleaning</b>							
Twice a day or more	51	43	7	1	4,790	31,711	
Once a day	58	49	12	2	1,440	9,681	
Never/less than once a day	85	65	17	7	180	1,313	
<b>Fluoride in toothpaste <sup>2</sup></b>							
1350-1500 <sup>3</sup>	54	44	8	1	4,330	28,319	
1000-1350 <sup>3</sup>	52	45	8	1	1,060	6,864	
550 or less or none <sup>3</sup>	60	55	15	3	350	2,153	
<b>Smoking</b>							
Currently smoke	58	52	13	2	1,260	8,915	
Ex-smoker	50	45	7	1	2,220	14,132	
Never smoked	55	42	7	1	2,940	19,707	
<b>Diet</b>							
High Sugar <sup>4</sup>	53	44	8	1	3,240	21,499	
Not High Sugar	55	47	9	2	3,190	21,317	
<b>Dental health</b>							
Presence of visible plaque	65	51	11	2	4,190	28,385	
Absence of visible plaque	33	34	4	1	2,230	14,431	
Presence of calculus	67	54	11	2	4,390	29,152	
Absence of calculus	26	27	3	0	2,020	13,463	

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

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**Table 2.2.3 Presence of bleeding for individual sextants**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>		
	<b>Percentage of people with bleeding in sextant</b>	<b>Unweighted Base</b>	<b>Weighted Base (000s)</b>
Upper left	28	5,750	38,845
Upper central	23	6,120	40,956
Upper right	23	5,710	38,598
Lower left	30	5,930	39,824
Lower central	34	6,370	42,342
Lower right	35	5,900	39,707

**Table 2.2.4 Extent of periodontal disease, by age**

*Dentate adults*

*England, Wales, Northern Ireland: 2009*

	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over	All
<b>Amongst all dentate adults</b>									
Percentage with pocketing 4mm or more	19	36	43	52	61	60	61	47	45
<i>Unweighted base</i>	640	910	1,280	1,190	1,140	800	380	80	6,430
<i>Weighted base (000s)</i>	6,708	7,064	8,487	7,162	6,362	4,073	2,334	483	42,676
<b>Amongst those with pocketing 4mm or more</b>									
Mean sextants with pocketing 4mm or more	2.4	2.8	2.8	2.8	2.8	2.6	2.4	2.5	2.7
Percentage of sextants affected	40	46	48	50	54	55	62	64	51
<i>Unweighted base</i>	120	320	540	620	700	470	230	40	3,020
<i>Weighted base (000s)</i>	1,302	2,563	3,668	3,757	3,908	2,456	1,415	225	19,295

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.



**Table 2.2.5 Loss of attachment by characteristics of dentate adults**

<i>Dentate adults aged 55 years and over</i>		<i>England, Wales, Northern Ireland: 2009</i>			
<b>Characteristics of dentate adults</b>	<b>Has LOA 4mm or more</b>	<b>Has LOA 6mm or more</b>	<b>Has LOA 9mm or more</b>	<b>Unweighted base</b>	<b>Weighted base (000s)</b>
<b>All</b>	66	21	4	2,410	13,253
<b>Age</b>					
55-64	61	18	2	1,140	6,362
65-74	67	22	5	800	4,073
75-84	76	25	5	390	2,334
85 and over	72	30	6	80	483
<b>Sex</b>					
Men	72	24	4	1,180	6,552
Women	60	18	3	1,230	6,701
<b>Country</b>					
England	65	20	4	2,110	12,152
Wales	77	33	3	170	800
Northern Ireland	61	16	2	120	300
<b>English Strategic Health Authority</b>					
North East	72	27	8	230	642
North West	67	19	4	210	1,623
Yorkshire & The Humber	62	16	3	160	1,065
East Midlands	62	21	3	270	1,007
West Midlands	70	31	9	200	1,393
East Of England	52	5	-	240	1,350
London	61	15	2	100	1,407
South East Coast	69	25	3	180	1,114
South Central	58	16	4	250	1,107
South West	79	27	5	270	1,444
<b>Socio-economic classification of household <sup>1</sup></b>					
Managerial and professional occupations	63	18	3	930	4,798
Intermediate occupations	67	20	3	480	2,706
Routine and manual occupations	68	24	4	790	4,458

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

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**Table 2.2.6 Periodontal condition by age: England, 1998-2009**

<i>Dentate adults</i>		<i>England: 1998-2009</i>								
		Periodontal condition								
		1998			2009					
		Any pocketing 4mm or more	Any pocketing 6mm or more	Any pocketing 9mm or more	Unweighted base	Any pocketing 4mm or more	Any pocketing 6mm or more	Any pocketing 9mm or more	Unweighted base	Weighted base (000s)
<b>All</b>		55	6	1	2,010	45	9	1	5,580	39,196
<b>Age</b>										
16-24		37	1	-	240	19	1	-	550	6,106
25-34		49	2	0	500	36	4	0	800	6,593
35-44		60	5	0	420	43	7	1	1,080	7,736
45-54		61	6	1	380	53	11	2	1,040	6,538
55-64		62	9	1	230	62	16	3	1,010	5,843
65-74		69	14	3	170	61	14	3	680	3,666
75 and over		67	23	9	60	60	14	1	410	2,539

**Table 2.3.1 Any moderate or severe tooth wear in anterior teeth by characteristics of dentate adults**

Characteristics of dentate adults	Percentage of dentate adults with:			Unweighted base	Weighted base (000s)
	Any wear	Some moderate wear	Some severe wear		
<b>Dentate adults</b>					
<b>All</b>	77	15	2	6,450	42,785
<b>Age</b>					
16-24	52	4	0	640	6,720
25-34	69	7	0	910	7,090
35-44	77	10	0	1,280	8,495
45-54	84	16	2	1,200	7,186
55-64	89	20	3	1,150	6,431
65-74	92	29	4	800	4,059
75-84	95	44	6	390	2,323
85 and over	94	34	6	80	481
<b>Sex</b>					
Men	82	19	3	2,950	20,981
Women	73	11	1	3,500	21,804
<b>Country</b>					
England	77	15	2	5,600	39,293
Wales	87	18	2	410	2,197
Northern Ireland	88	15	2	430	1,295
<b>English Strategic Health Authority</b>					
North East	70	24	3	570	1,919
North West	73	9	1	590	5,186
Yorkshire & The Humber	75	10	1	500	3,903
East Midlands	74	11	2	710	3,373
West Midlands	93	33	4	490	3,973
East Of England	70	9	1	640	4,422
London	77	23	2	400	6,016
South East Coast	66	10	1	440	3,299
South Central	82	9	0	610	3,195
South West	82	10	2	660	4,009
<b>Socio-economic classification of household <sup>1</sup></b>					
Managerial and professional occupations	77	15	1	2,580	16,885
Intermediate occupations	80	14	1	1,180	7,761
Routine and manual occupations	77	16	2	2,010	13,572

<sup>1</sup> Excludes people in households where the household reference person was not interviewed. Respondents whose head of household/household reference person was a full time student, in the Armed Forces, had an inadequately described occupation, had never worked or were long-term unemployed are not shown as separate categories but are included in the total.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.3.2 Any, moderate or severe tooth wear in anterior teeth by reported dental attendance and behaviour**

Reported dental behaviour	Percentage of dentate adults with:			Unweighted base	Weighted base (000s)
	Any wear	Some moderate wear	Some severe wear		
<b>All</b>	77	15	2	6,450	42,784
<b>Dental attendance</b>					
Regular check up	78	16	1	4,370	26,770
Occasional check up	74	14	2	550	4,274
Only with trouble	78	14	2	1,440	10,981
Never goes to the dentist	77	7	2	80	710
<b>Time since last dental visit <sup>1</sup></b>					
Less than 1 year	78	16	2	4,940	31,219
Between 1 and 5 years	76	14	1	960	7,375
Over 5 up to 10 years	77	12	4	260	2,048
Over 10 years	80	16	6	200	1,420
<b>Frequency of teeth cleaning</b>					
Twice a day or more	76	14	1	4,810	31,690
Once a day	81	18	2	1,440	9,679
Never/less than once a day	78	18	7	180	1,305
<b>Fluoride in toothpaste <sup>2</sup></b>					
1350-1500 <sup>3</sup>	76	14	2	4,340	28,318
1000-1350 <sup>3</sup>	80	15	1	1,060	6,860
550 or less or none <sup>3</sup>	85	19	1	350	2,143
<b>Smoking status</b>					
Current smoker	78	14	2	1,260	8,906
Ex-smoker	81	19	2	2,220	14,115
Never smoked	75	13	1	2,950	19,702
<b>Diet</b>					
High Sugar <sup>4</sup>	78	15	2	970	21,492
Not High Sugar	77	15	2	5,480	21,293

<sup>1</sup> Excludes people who had never been to dentist

<sup>2</sup> Excludes those who reported that they never cleaned their teeth and those who didn't give enough information for fluoride content to be coded

<sup>3</sup> Parts per million

<sup>4</sup> Has cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week.

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.3.3 Extent of wear, by age**

<i>Dentate adults</i>	<i>England, Wales, Northern Ireland: 2009</i>								
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over	All
<b>Amongst all dentate adults</b>									
Percentage with moderate wear	4	7	10	16	20	29	44	34	15
<i>Unweighted base</i>	640	910	1,280	1,200	1,150	800	390	80	6,450
<i>Weighted base (000s)</i>	6,719	7,089	8,494	7,186	6,431	4,058	2,323	481	42,784
<b>Amongst those with moderate wear</b>									
Mean number of teeth affected	2.7	2.3	3.0	3.5	3.3	3.1	3.2	2.6	3.1
Percentage of teeth affected	22	19	26	30	31	32	38	37	30
<i>Unweighted base</i>	30	50	130	180	230	230	160	30	1,030
<i>Weighted base (000s)</i>	270	505	852	1,166	1,271	1,180	1,012	162	6,418

Shaded figures indicate the estimates are unreliable and any analysis using these figures may be invalid. Any use of these shaded figures must be accompanied by this disclaimer.

**Table 2.3.4 Any moderate or severe tooth wear in anterior teeth by age: England, 1998 and 2009**

*Dentate adults*

*England: 1998-2009*

	Percentage of dentate adults with wear								
	1998				2009				
	Any wear	Some moderate wear	Some severe wear	Unweighted base	Any wear	Some moderate wear	Some severe wear	Unweighted base	Weighted base (000s)
<b>All</b>	66	11	1	2,190	76	15	2	5,620	39,420
<b>Age</b>									
16-24	35	1	0	250	50	4	0	550	6,120
25-34	58	5	0	520	68	7	0	800	6,620
35-44	62	8	0	450	76	10	0	1,090	7,787
45-54	77	11	1	420	84	16	2	1,050	6,601
55-64	84	17	1	260	88	19	3	1,030	5,964
65-74	88	30	5	210	91	27	4	700	3,731
75 and over	96	45	9	80	94	41	6	410	2,590

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**Responsible Statistician**

Phil Cooke  
Section Head  
Dental and Eye Care Team

For further information:

**[www.ic.nhs.uk](http://www.ic.nhs.uk)**

**0845 300 6016**

**[enquiries@ic.nhs.uk](mailto:enquiries@ic.nhs.uk)**

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