

REPORT ON CONDITION AND PROGNOSIS

(D.O.B. DD/MM/YYYY)

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S Dr Name Name

Examined on DD/MM/YYYY

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REPORT PREPARED FOR

Name Name Solicitors
Address, Address
Postcode

Solicitor's Reference: Ref ***** /*****

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1. INTRODUCTION

1. This report is prepared at the request of Name Name Solicitors, on their client Name Name in connection with her claim in negligence against her former general dental practitioner Dr Name Name practising at Adress Address.

The Author of this Report - Philip Raymond Greene

My credentials for providing this expert opinion are summarised in my Curriculum Vitae in Section 8 of this report. I am aware of the requirements of Part 35 and Practice Direction 35, the Protocol for the Instruction of Experts to give Evidence in Civil Claims and the Practice Direction on pre-action conduct. I have obtained the Bond Solon Civil Procedure Rules for Expert Witnesses Certificate to evidence my understanding and compliance with the above requirements.

2. It is alleged that Dr Defendant failed to diagnose, treat, or monitor the Claimant's periodontal disease, or to refer her for specialist advice and that, as a result, she has lost some of the bone attachment for her teeth, fourteen of which have been lost.
3. I am asked to address the following issues in this report:
 - a) The current condition and prognosis of the Claimant's teeth, paying attention to her experiences and how they have affected her everyday life;
 - b) Which teeth have already been extracted or lost, and which teeth are likely to be lost in the future and at what time;
 - c) The treatment required now to save as many teeth as possible;
 - d) Treatment options available to the Claimant to return her dentition, as far as is possible, to an acceptable standard, with an indication of the treatment of choice;

- e) The likely costs of all the treatment options available to the Claimant, including any repeat treatment and cyclical restorations;
- f) The extent to which she would have required such treatment in any event, even if breach of duty had not occurred.

2. CHRONOLOGY

- i. Mrs Claimant attended the practice of Dr Keith Defendant between 1979 and 2011, a period of thirty-two years. During that time her periodontal condition gradually deteriorated and numerous teeth became loose. In 2011 she had an accident during which she suffered a blow to one of her front teeth, causing the root to fracture. Dr Defendant recommended extraction of the tooth and Mrs Claimant requested an implant to replace the missing tooth. She was therefore referred to the Dental Dental Implantology Practice, where she was examined by Dr Other Dentist.
- ii. Dr Other diagnosed advanced periodontal disease and referred Mrs Claimant to Professor Hospital Consultant in London, a specialist in periodontics, who confirmed the diagnosis of advanced, chronic periodontitis and recommended the extraction of teeth and a course of non-surgical and subsequently surgical periodontal therapy which resulted in control of her periodontitis.
- iii. Subsequently she has been provided with implants in the positions of the upper central incisors, the upper left premolar and the lower right premolar. She is awaiting further implants and restorative treatment in the right maxilla to complete her restorative treatment plan.

3. CLINICAL EXAMINATION

I examined the Claimant for the purposes of this report on 16th Whenever 2012. She told me the sequence of events that had led to this claim as detailed above.

3.1 Current Problems

The patient was experiencing no problems at the time of examination.

3.2 Relevant medical history

- i. There are no significant medical conditions. The patient was taking hormone replacement therapy.
- ii. Mrs Claimant told me that she had smoked for a short period of time between the age of seventeen and twenty-four and that she had not smoked cigarettes since that time.

3.3 Extra oral examination

Nothing abnormal detected (NAD).

3.4 Intraoral examination

Soft tissues

NAD.

Teeth

The following summary of the Claimant's dental condition is based on clinical, radiographic and periodontal examination. The periodontal data chart can be found as an appendix to this report. Estimates of attachment loss for the teeth are made on the basis of radiographic assessment and can only be approximate since there is no scientifically accurate way of measuring attachment loss.

Clinical Parameters used:

Furcation involvement

Furcation involvement means that there is loss of bone between the roots of the teeth, classified as follows:

Level 1: loss of bone up to a third of the width of the furcation area.

Level 2: loss of bone up to two thirds of the width of the furcation area.

Level 3: loss of bone involving the whole furcation area.

Level 4: the furcation area is visible above the level of the gum.

Tooth mobility

There is normally no detectable mobility of a tooth in its socket.

Abnormal tooth mobility (hypermobility) is scored as follows:

Level 1 is movement of 0-1mm.

Level 2 is movement of 1-2mm.

Level 3 is movement of the tooth more than 2mm, or in more than one direction or apical depressibility.

Teeth Present

At the time of examination the following teeth were present in the mouth:

UR 4321 : UL1234

LR 654321 : LL1234 6

Notes:

- The UR1 and UL1 are both implant-supported crowns.
- UR2, UL2 are metal-ceramic crowns.
- LR654 is a metal-ceramic bridge supported by two implants.

Gingival Recession

I found recession at 35 of a possible 84 sites (42%). In the lower jaw the recession was significant, mostly in the region of 4-5mm.

Periodontal Pocketing

I found no periodontal pocketing.

Bleeding on Probing

Bleeding on probing, usually accepted as a measure of inflammation, was present at 3 sites (2%) which is low.

Tooth Hypermobility

UR4 was mobile at level 2 (1-2mm)

LR321 and LL1 were mobile at level 1

Plaque control

Mrs Claimant use an Oral B Electric toothbrush twice daily and also interdental brushes and Fluoride mouthrinse, all daily.

Occlusion and Temporomandibular Joint

The patient has a Class 2 division 1 occlusal relationship. There was a solid centric contact without apparent premature contact. There was a bilateral opening click of the TMJ which was not troublesome. Mandibular function appeared to be normal with inter-incisal dimension and opening in the range 41-45mm.

Radiographic findings

1. I used the most recent OPG X-ray and periapical radiographs taken by Dr Generalist, who has been providing implant treatment for Mrs Claimant. The most recent X-rays were taken within a few months of my examination. The radiographic findings are tabulated below.

2. The radiographs show:

Tooth	Bone Loss	Prognosis	Comment
UR5			Measurement indicating planned implant
UR4	60%	Fair	Mobile 1-2mm
UR3	15%	Good	
UR2	10%	Questionable	Tooth has post-crown and no apparent root filling
UR1			Implant
UL1			Implant
UL2	15%	Poor	Recently undergone endodontic re-treatment
UL3	No significant bone loss	Good	
UL4	60%	Fair	Has been re-root-filled. Minimal hypermobility.
UL5	Implant		Awaiting restoration
LR8	Unerupted		Horizontally impacted
LR6			Implant
LR4			Implant
LR3	50%	Good	
LR2	70%	Poor	

LR1	60%	Poor	
LL1	60%	Poor	
LL2	60%	Poor	
LL3	No significant bone loss	Good	
LL4	No significant bone loss	Good	
LL6	10%	Good	
LL8	Unerupted		Horizontally impacted

4. DIAGNOSIS

Advanced periodontal disease.

5. PROGNOSIS

Assessment of prognosis is based on a variety of factors all of which are taken into consideration in assessing the likely longevity of any given tooth. At the present time there is no scientifically accurate way of measuring or determining the prognosis of an individual tooth. The most important dental factors are the degree of inflammation, tooth type, tooth mobility, and furcation involvements. Other environmental factors, such as smoking, diabetes and the patient's compliance with periodontal maintenance treatment will also influence outcomes.

Risk Analysis

A method of risk analysis has been published by two eminent Professors of Periodontology in order to assess the degree of risk of further tooth loss in patients with known susceptibility to periodontal disease. Their data is presented in a risk analysis diagram, however I have used a bar-chart format to illustrate the degree of risk in this case. The risk analysis uses six parameters to determine the risk of future periodontal attachment loss:

- the percentage of sites which bleed on probing
- the number of periodontal pockets
- tooth-loss already experienced
- age-related bone loss
- systemic and general risk factors
- smoking

This data is presented as an appendix to this report. Using this method of analysis the Claimant's risk of further attachment loss is low-moderate.

Prognosis for individual teeth

In assessing prognosis in this case I will rely on published literature and my experience gathered over thirty-five years of general dental and periodontal practice.

A series of studies was published in 1991 and 1996 in the Journal of Periodontology which related the survival of 2509 teeth in 100 consecutive treated periodontal patients under maintenance care with the same clinician to the initially assessed prognosis. All the patients were under maintenance regimens of 2-3 month intervals. The prognosis was assessed by the clinician using the commonly used criteria. Individual tooth factors included, among others, the degree and nature of attachment loss, furcation involvement, probing depth, tooth mobility, caries, pulp involvement, tooth position and occlusion. Overall prognostic factors included, among others, the patient's age, medical status, individual tooth prognosis, rate of disease progression, oral habits and compulsions.

A tooth was considered to have a poor prognosis if it had more than 50% attachment loss, and/or Class II furcation involvement (bone loss 1/3 - 2/3 of the furcation width) or Class II mobility.

A key finding in this study was that, after ten years 60% of teeth classified as poor or hopeless had been lost. Multi-rooted teeth were more likely to have been lost than single rooted teeth with the same initial prognosis.

Ref : Prognosis Versus Actual Outcome. II The Effectiveness of Clinical Parameters in Developing an Accurate Prognosis. Maguire MK, & Nunn ME, J Periodontol, 1996 Vol 67 No 7

Ref: Prognosis Versus Actual Outcome. III The Effectiveness of Clinical Parameters in Accurately Predicting Tooth Survival. Maguire MK, & Nunn ME, J Periodontol, 1996 Vol 67 No 7

On the basis of the above I would assess the prognosis of individual teeth as follows:

GOOD PROGNOSIS	UR3, UL3, LR3, LL346
FAIR PROGNOSIS	UR4, UL4
POOR PROGNOSIS	UR2, UL2, LR21, LL12

6. OPINION REGARDING TREATMENT OPTIONS

Periodontal Maintenance

- i. In view of the patient's proven susceptibility to periodontal breakdown, supportive periodontal therapy in a specialist periodontal environment is required to maintain the remaining teeth in periodontal health for the remainder of the patient's life. This will involve treatment by a suitably experienced dental hygienist at least three-monthly and re-examination by a specialist periodontist at least annually. I would expect this to incur costs in the region of £550 per year at current private rates.

ii. In view of the Claimant's proven susceptibility to periodontitis, she would have needed some degree of ongoing periodontal maintenance in any event, however, the need is much greater now that such a great amount of periodontal attachment has been lost. I would therefore, attribute 50% of ongoing periodontal maintenance fees to the 's failure to provide timely and appropriate diagnosis and treatment or referral for the Claimant.

Treatment Options for the Maxilla

Partial Upper Removable Denture

A denture could be made in a cobalt-chromium alloy retained with cast metal clasps on the posterior teeth. A denture would restore appearance and some function and provide some flexibility if more teeth are lost in the future, however a denture is a poor substitute for the natural teeth and it would not provide Mrs Claimant with the fixed teeth that she would have had if the Defendant had provided her with competent treatment.

Implant-Supported Fixed Prosthesis

A dental implant is a titanium anchor fixed in the jawbone replacing a tooth or teeth that have been lost. Adequate bone volume is a pre-requisite for success. In this case, Mrs Claimant has already sustained considerable bone loss due to periodontal disease and radiographs show that her maxillary sinuses are very large, reducing the availability of bone in the posterior areas. These deficiencies can be overcome by means of sinus augmentation in the posterior areas.

The Sinus Lift Procedure

The loss of bone height and the proximity of the maxillary antrum (sinus) to the apex of the tooth indicate that a sinus lift procedure will be required on both sides of the maxilla to provide enough bone into which implants can be

placed. This procedure is done under local anaesthetic. A window of bone is formed over the sinus on the buccal aspect and collapsed inwards creating a space into which bone-grafting material is placed. Implants can be placed in the new bone six months later.

Treatment Options for the Mandible

Partial Removable Denture

The same considerations apply as described for the maxilla above.

Fixed Bridgework Supported by the remaining teeth

Fixed bridgework involves preparing the teeth adjacent to the gaps for metal-ceramic crowns, which are linked together by artificial teeth to replace the missing teeth. The tooth preparation involved compromises the abutment teeth to some extent; they are 5-10% more prone to endodontic problems as a result. Bridgework would improve aesthetics and function, providing a fixed restoration. The average life of bridgework is approximately ten years and the potential abutment teeth in this case are already compromised by loss of periodontal attachment.

Implant-Supported Fixed Prosthesis

The same considerations apply as described for the maxilla above.

Radiographs show that in the posterior mandible there is insufficient bone available for implants to be safely placed due to the loss of bone height and the proximity of the inferior alveolar nerve canal.

Recommended Treatment Plan

1. Clearly a restorative plan is already in operation and partially completed. This will provide Mrs Claimant with some stability for the next five to ten years however, some teeth have a poor ten-year prognosis and in my opinion, provision should be made for replacement of these teeth in due course.

2. I would anticipate that she will need ongoing supportive periodontal therapy in a specialist practice to prevent recurrence of her periodontitis.
3. I anticipate that she will eventually lose both upper lateral incisors because they are already root-filled and post-crowned. The root-filling is non-existent on the UR2 and a poor quality on the UL2. These teeth could be replaced with two further implants.
4. The four lower incisors have lost 60-70% of their bone support and therefore are unlikely, on the balance of probabilities, to survive longer than ten years. These four teeth could be replaced with a metal-ceramic bridge supported by two implants.

7. ESTIMATED COSTS OF TREATMENT

in GBP at current private practice rates

Subject to expected fees by Current Dental Practice

ITEM	Estimated cost in GBP
Supportive periodontal therapy in a specialist practice 50% attributable to)	550 per annum
Provision of partial upper denture replacing upper lateral incisors during the healing phase	400
Extraction of UR2, UL2	200
Replacement of UR2, UL2 with metal-ceramic crowns supported by Titanium implant @ 2,500 each	5,000
Removal of LR21 and LL12 Under local anaesthetic	200
Provision of partial lower acrylic denture.	400
Replacement of four lower incisors with metal-ceramic crowns supported by 2 Titanium implant fixtures in positions LR2, LL2 @ 2,500 each	5,000
Replacement of the metal-ceramic superstructures at approx 15-year intervals 13 units @ £800 per unit	10,400

Philip R. Greene BDS, FDSRCPS, CUEW, JP.

I qualified from the University of Liverpool in 1971 and, after a post as a House Officer in the Liverpool Dental Hospital, began work in General Dental Practice. I was awarded the Fellowship in Dental Surgery from the Royal College of Surgeons of Glasgow in 1980. I was accepted on the General Dental Council's Specialist List in Periodontics when it was established in 1998.

From 1972 I worked in both NHS and Private General practice and, since 1981, have worked in Specialist Periodontal Practice. I have taught in the Department of Restorative Dentistry at the Manchester Dental School and repeated my "*Effective Periodontics*" practical seminar programme for the Department of Postgraduate Dentistry at the University of Manchester several times.

I have published many papers and articles on Periodontics and related subjects and my video film, "*Initial Periodontal Therapy*", was awarded the *Diplome d'Honneur* at the 1991 International Dental Film and Video Festival in Paris. My paper "*Non-Surgical Periodontal Therapy - Essential and Adjunctive Methods*" was published in the British Dental Journal in July 1995 and I presented a paper on subgingival antibiotic gel therapy at the Annual Meeting of the American Academy of Periodontology in September 1995. I am a co-author of the Chapter on Periodontics in the Clinical Textbook of Dental Hygiene and Therapy, first published in 2006 and now in its second edition.

I was the founding Chairman of the Dental Practitioners Section of the British Society of Periodontology and currently serve on the Education Committee and Council of that Society as President of the Society. I am also an International Member of the American Academy of Periodontology and was a founding member of the Expert Witness Institute. I have been providing expert reports on a regular basis for over fifteen years.

I have been awarded the Certificate of Expert Witness Accreditation by the Cardiff University Law School and the Bond Solon CPR Awareness Certificate.

In November 2007 I was appointed to the Bury Magistrates Court as a Justice of the Peace.

GLOSSARY OF DENTAL TECHNICAL TERMS

bridge

a replacement tooth fixed to adjacent teeth by adhesion or restorations of the adjacent teeth

buccal

the side of the teeth nearest to the cheek

caries

dental decay

crepitus

rough grinding sound; suggests some obstruction to smooth movement of the joint.

crown

the part of the tooth which is present in the mouth

distal

the tooth surface nearest the back of the mouth

fremitus

discernible movement of the teeth when they bite together

furcations

the spaces between the roots of the premolars and molars which have more than one root

gingival recession (receding gums)

migration of the gum margin away from the dental enamel margin exposing the root surface which should normally be covered.

gingivitis

inflammation of the gum margins

incisors

front teeth

lingual

the side of the teeth nearest to the tongue

maxilla

the upper jaw

mesial

the tooth surface nearest to the centre

mobile

loose

occlusion

the way in which the teeth bite together

periapical

the area surrounding the tip of the tooth remote from the mouth

periodontitis

a destructive inflammatory condition of the gums and supporting bone which results in gradual loss of the bone which supports the teeth; caused by dental plaque, aggravated by various other factors, and prevented by adequate plaque removal before the disease becomes established

periodontal pocket

gap between the gum and the tooth more than 3mm deep caused by loss of attachment between the gum, the bone and the tooth

root

the part of the tooth which is anchored in the bone

root canal therapy

disinfection and sealing of the root canals inside a tooth

temporo-mandibular joints

the joints between the upper and lower jaws, situated just in front of the ears

tuberosity

a small bony protruberance behind the last upper molar

paraesthesia

alteration in sensibility of a nerve

splinting

fixing two teeth or bone fragments together to restrict movement and promote healing

supra-erupted

grown out of position due to the absence of an opposing tooth

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Expert's Declaration

1. I understand that my overriding duty is to assist the court in matters within my expertise and that this duty overrides any obligation to those instructing me or their clients. I confirm that I have complied with that duty and will continue to do so. I am aware of the requirements set out in Part 35 of the Civil Procedure Rules and the accompanying Practice Direction, the Protocol for the Instruction of Experts to give Evidence in Civil Claims and the Practice Direction for Pre-action Conduct.
2. I have set out in my report what I understand from those instructing me to be the questions in respect of which my opinion as an expert are required.
3. I have done my best, in preparing this report, to be accurate and complete. I have mentioned all matters that I regard as relevant to the opinions I have expressed. All of the matters on which I have expressed an opinion lie within my field of expertise
4. I have drawn to the attention of the court all matters of which I am aware, which might adversely affect my opinion.
5. Wherever I have no personal knowledge, I have indicated the source of factual information.
6. I have not included anything in this report that has been suggested to me by anyone, including the lawyers instructing me, without forming my own independent view of the matter.
7. Where, in my view, there is a range of reasonable opinion, I have indicated the extent of that range in the report.
8. At the time of signing the report I consider it to be complete and accurate. I will notify those instructing me if, for any reason, I subsequently consider that the report requires any correction or qualification.
9. I understand this report will be the evidence that I will give under oath, subject to any correction or qualification I may make before swearing to its veracity.
10. I have attached to this report a statement settling out the substance of all facts and instructions given to me that are material to the opinions expressed in this report or upon which those opinions are based.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.



Philip R. Greene, BDS, FDSRCPS, CUEW, JP.
DD/MM/YY

