IN THE PROPOSED PROCEEDINGS **CLAIM NUMBER**

BETWEEN **XXXXXXXXXX (CLAIMANT)**

AND **XXXXXXXXXX (DEFENDANT**

REPORT FOR THE COURT ON CONDITION AND PROGNOSIS

DATE OF EXAMINATION: AUGUST 17TH 2020

EXAMINED BY: XXXXXXXXXXXX

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REPORT PREPARED ON INSTRUCTIONS FROM:

XXXXXXXXXX (Solicitors)

Ref No

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1. INTRODUCTION

This report is prepared at the request of The Dental Law Partnership, on their client XXXXXXXXXX in connection with his claim in negligence against his former general dental practitioner, Dr XXXXXXXXXX, practising at XXXXXXXXXXX Dental Practice,

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.

It is alleged that the Defendant, as the owner of the practice, failed to ensure that associate dentists, working at the practice provided treatment of an acceptable standard, in that they failed to diagnose, treat or monitor the Claimant's periodontal disease, or to refer him for specialist advice and that, as a result, he has lost some of the bone attachment for his teeth, some of which have been lost. It is alleged that he will lose more teeth in the future.

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 his experiences and how they have affected his 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 his 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) Whether he would have required such treatment in any event, even if breach of duty had not occurred.

2. SUMMARY OF CONCLUSIONS

i. The Claimant received dental treatment from the Defendant that was below an acceptable standard for a general dental practitioner at that time.

ii. As a result of the Defendant's breach of duty, the Claimant is suffering from loose and hypersensitive teeth, and gingival recession. He has also lost all four lower incisors, currently replaced by an adhesive bridge.

iii. The Claimant's risk of further periodontal attachment loss is high.

iv. UR: 5,4,1; UL1,2,4,5,6, and LR: 5,4; LL: 4,5 have a poor prognosis, and are likely to be lost within ten years

v. The Claimant requires a course of nonsurgical and surgical periodontal therapy now to stabilise his periodontitis.

vi. On the balance of probabilities, he will need implant supported restorations to replace 11 missing teeth within ten years from the date of this examination.

3. CHRONOLOGY

i. The Claimant attended the XXXXXXXXX Dental Practice for dental treatment between XXXXXXXXX and XXXXXXXXXXX. He attended on a regular basis, receiving treatment from different clinicians during that period of time. The first recorded periodontal examination appears to have been in XXXXXX when BPE scores of XXX/XXX were recorded. The Claimant was noted as a regular smoker, complaining of sore gums, however no periodontal treatment was provided at this time. The radiographs showed signs of periodontal attachment loss characteristic of periodontitis. Thereafter, some periodontal treatment was provided, albeit without the benefit of periodontal data to assess progress.

ii. When the Claimant attended the XXXXX dental practice in November 2017 generalised severe chronic periodontitis was diagnosed with evidence of periapical pathology affecting UR6, UL4, UL7, LL1, LR1, and LR2. Bone loss of almost 100% was noted in some areas. Numerous teeth were assessed as having a poor prognosis and all four lower incisors required extraction immediately.

iii. Further treatment has been provided since XXXXXX at the XXXXXX dental practice, XXXXXXX, and the XXXXXXXX. I understand that treatment is continuing at the latter practice.

4. CLINICAL EXAMINATION

Introduction

i. The examination for the purposes of this report took place on Monday August 17th at 12.15pm.

ii. He told me the sequence of events that had led to this claim as detailed above, and provided me with information about his social, medical and dental history, current oral problems and hygiene, and confirmed consent for collection and use of data, and for radiography for the purposes of this report.

4.1 Current problems

i. Receded gums, following treatment, all his teeth feel painful; takes ibuprofen, 3/day (200mg) – pain is constant, worse after hard foods, does not disturb sleep, H&C fluids make worse, all pain present since deep cleaning, 5yrs ago; not returned to dentist who did that treatment.
ii. Sensitivity of his teeth, can chew food – maintains a soft diet, likes chocolate, but avoids it now due to the sensitivity
iii. Loose teeth – upper anterior & some back ones

4.2 Relevant medical history

Social:	Fork lift truck driver – laid off in January, but has been asked to go back in September;
Conditions:	None
Medications:	OTC painkillers as required
Smoking History:	Quit smoking c2011; started age c19, 2-3 cigs/day
Alcohol:	Intermittent use – <10U/week probably

4.3 Extra oral examination

NAD (Nothing Abnormal Detected)

4.4 Intraoral examination

NAD

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

Tooth Notation in this report:

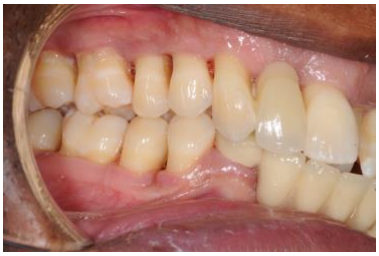
Tooth notation may vary between different practitioners. For example a single standing premolar may be charted as 4 or 5.
Any two molars may be charted as 6 & 7, 7 & 8 or 6 & 8.
A single molar may be charted as 6, 7, or 8.
I would normally chart two standing molars as 6 & 8, irrespective of their anatomically accurate numbering, unless their original position is obvious.

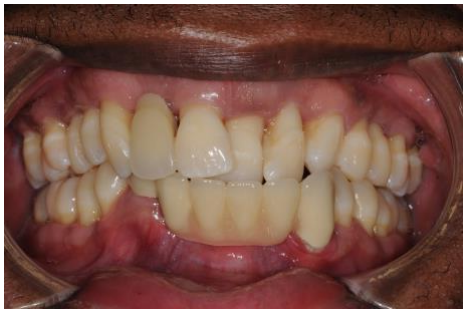
Teeth are numbered either as URn or using the WHO tooth notation ie:
1n = URn = Upper Right n
2n = ULn = Upper Left n
3n = LLn = Lower Left n
4n = LRn = Lower Right n

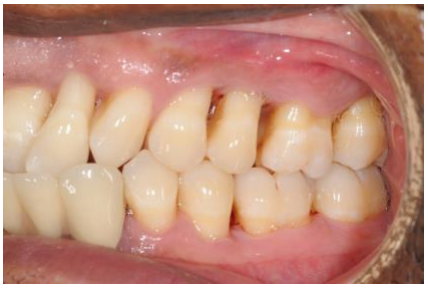
At the time of this examination the following teeth were present:

UR 876543-1 : UL 12345678

LR 876543-- : LL –345678







Notes:

- UR2 is replaced by an adhesive bridge supported by UR3
- LR2-LL2 are replaced by an adhesive bridge supported by LR3 and LL3

Gingivae

Pigmented, stippled, thick biotype, generalised recession

Gingival Recession

Gingival recession was found at106 sites (65%) mostly in the 1-3 mm range.
8 sites had recession >3mm.

Periodontal Pocketing

Periodontal pockets (>3mm) were found at 66 sites (41%), of which 18 sites, involving 11 teeth, were >5mm.

Bleeding on Probing

Bleeding on probing, usually accepted as a measure of inflammation, was present at 42 sites (26%).
Most of the bleeding sites coincided with residual periodontal pockets.

Tooth Hypermobility

Grade 1 hypermobility was found affecting:

UR5;	UL1,2,3,4,5'
LR8,5,4;	LL4

Plaque control

Toothbrush:	ETB Oral B
Interdental Brushes:	TePe – 3 sizes, used daily, no BOB now
Floss:	Uses daily
Mouthrinses:	Listerine Adv.

Plaque control assessment: 55% effective, leaving plaque mostly interproximally and lingual molars and palatal molars.

Occlusion and Temporomandibular Joint

i. Claimant has a mild Angles Class 3 (reversed) incisor relationship, with crowding/imbrication of UR1/UL1, with no fremitus. Wear facets were found on the right side of the lower anterior bridge.
ii. Protrusive guidance was provided by LR3 with no posterior interferences.

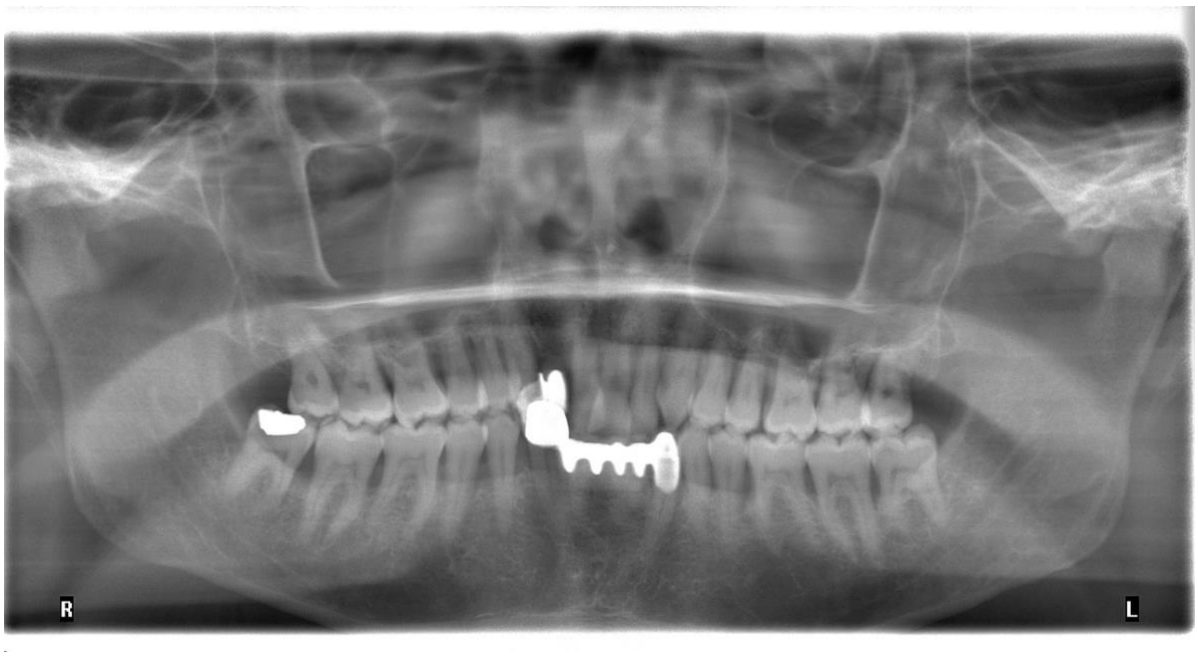
iii. Right lateral guidance was by provided by group function with no non-working posterior interferences.
iv. Left lateral guidance was provided by group function with non-working posterior interferences at UR1/LR3
v. The Claimant has a maximum mouth opening of 40-50mm (normal range) with no deviation on opening or closing.
vi. There were no abnormal joint sounds.
vii. In summary there were no signs of temporo-mandibular joint dysfunction.

Radiographic findings

An OPG digital panoral radiograph and nine digital periapical radiographs were taken, together with a series of intra-oral clinical digital photographs.

The OPG Xray is reproduced here.

Detailed radiographic findings are tabulated below:



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Radiographic Findings: XXXXXX XXXXXX (Age 37)

Tooth	Bone Loss %	Perio prognosis	Comment
UR8	20	Good	
UR7	30	Good	
UR6	40	Good	
UR5	70	Poor	Mobile Grade 1
UR4	60	Poor	
UR3	50	Good	No mobility, accessible for OH
UR2			Missing
UR1	60	Poor	Mobile G1
UL1	70	Poor	Mobile G1
UL2	70	Poor	Mobile G1
UL3	20	Good	Mobile G1
UL4	50	Poor	Mobile G1
UL5	70	Poor	Mobile G1
UL6	60	Poor	
UL7	30	Good	
UL8	20	Good	
LR8	10	Good	Mobile D1
LR7	20	Good	
LR6	30	Good	
LR5	50	Poor	Mobile G1
LR4	50	Poor	Mobile G1
LR3	25	Good	
LR2			Extracted 2017 (Perio)
LR1			Extracted 2017 (Perio)
LL1			Extracted 2017 (Perio)
LL2			Extracted 2017 (Perio)
LL3	20	Good	
LL4	60	Poor	Mobile G1
LL5	60	Poor	
LL6	20	Good	
LL7	20	Good	
LL8	20	Good	

In this table a poor prognosis indicates a tooth likely to be lost within 10 years on the balance of probabilities. A good prognosis assumes effective treatment and optimal home care a can be achieved.

5. DIAGNOSIS

Chronic periodontitis, Stage IV, Grade C, currently unstable.
Risk Factors: Bone Loss/Age, indicates high susceptibility.

6. 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 published in the journal: *Oral Health Prev Dent* is an accepted method of assessing the degree of risk of further tooth loss in patients with known susceptibility to periodontal disease. The data is presented in a risk analysis diagram appended to this report. 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

Ref: Lang NP, Tonetti MS: Periodontal Risk Assessment (PRA) for patients in supportive periodontal therapy (SPT) Oral Health Prev Dent 1: 7-16 (2003)

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

Prognosis for individual teeth

In assessing prognosis in this case I will rely on published literature and my experience gathered over forty years of general dental and specialist 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 all the above factors, I would assess the prognosis of individual teeth as follows:

GOOD PROGNOSIS	**UR: 8,7,6,3; UL: 3,7,8**
Likely to survive for the patient's lifetime	**LR: 8,7,6,3; LL: 3,6,7,8**
POOR PROGNOSIS	**UR: 5,4,1; UL1,2,4,5,6;**
Likely to be lost within ten years	**LR: 5,4; LL: 4,5.**

7. OPINION REGARDING TREATMENT OPTIONS

Periodontal Therapy

1. 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 £740 per year at current private rates. (Periodontist 2x/yr at £190; Hygienist 4x/yr at £90)

2. In view of the Claimant's proven susceptibility to periodontitis, he would have needed some degree of ongoing periodontal maintenance in any event, however, the need is much greater now that a significant amount of periodontal attachment has been lost. Early treatment would have controlled the condition and maintenance could then have been continued in a general dental practice, however specialist treatment and maintenance are now needed. I would therefore, attribute 50% of ongoing periodontal maintenance fees to the Defendant's failure to provide timely and appropriate diagnosis and treatment or referral for the Claimant. This represents the difference in fees between general and private specialist practice.

3. Periodontal Surgery will be required to eliminate the very deep (>5mm) pockets affecting the lower molars on both sides, in order to enable optimal plaque control in the future.

Treatment Options for the Maxilla

UR: 5,4,1; UL1,2,4,5,6 will be lost within 5-10 years, on the balance of probabilities, as a result of the Defendant's breach of duty.

The options for replacement of missing teeth are as follows:

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 this option would not provide the Claimant with a fixed dentition as he had at the outset of care provided by the Defendant.

Estimated Cost £1,250, replacement cycle: 10 years.

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 abutment teeth in this case are already somewhat compromised by loss of periodontal attachment.

Estimated cost: £800 per unit for abutment and pontic teeth, 12 units required, costing £9,600.

Replacement cycle: 10-12 years

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, the Claimant has already sustained considerable bone loss due to periodontal disease and radiographs show that his maxillary sinuses are very large, reducing the availability of bone in the posterior areas. These deficiencies can be overcome by means of a sinus augmentation procedure on both sides. A CBCT scan will be necessary to evaluate the bone volume and density in order to plan the augmentation and the optimal placement of implants.

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.

Estimated Cost: £1,250 + £350 (intravenous sedation) per side.

<u>Options for the Mandible</u>

LR: 5,4 and LL: 4,5 will be lost within 5-10 years on the balance of probabilities as a result of the Defendant's breach of duty.

The adhesive bridgework is likely to have a relatively short lifespan due to the nature of its retention.

The options for replacement of the missing teeth are as follows:

Partial Removable Denture

The same considerations and costs apply as described for the maxilla above.

Estimated Cost £1,250, replacement cycle: 10 years.

Fixed Bridgework Supported by the remaining teeth

The same considerations apply as described for the maxilla above.

Estimated cost: £800 per unit for abutment and pontic teeth, 10 units required, costing £8,000.

Replacement cycle: 10-12 years

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. A Computerised Tomographic (CT) scan would be required to define the position of the nerve and plan the placement of the implants.

8. RECOMMENDED TREATMENT PLAN

In order to return the Claimant to a fixed, aesthetic and functional dentition, removable dentures would not be appropriate. The most predictable long-term plan would be based on implant-supported prostheses.

Estimated costs of remedial treatment follows…

9. SEQUENCE OF REMEDIAL TREATMENT

- With estimated costs in GBP based on current private practice costs
- Time Off Work in Brackets; *Recurring items in italics;*

GENERAL

Specialist Periodontal Maintenance Therapy - £740 per annum *50% attributed to Defendants*	*£370*

PERIODONTAL SURGERY

Pocket elimination surgery at LR876 and LL678 2 x £750	£1,500

MAXILLA

Extraction of UR 5,4,1; UL 1,2,4,5,6 (2 days)	£350
Partial upper removable interim denture (2 days)	£750
CBCT Scanning of maxilla and analysis of images (1/2 day)	£300
Sinus Lift Augmentation, right maxilla (4 days)	£1,250
Sinus Lift Augmentation, left maxilla (4 days)	£1,250
Intravenous sedation for sinus augmentation £175/hr x 2 x 2	£700
Construction of a surgical guide stent for optimal implant placement	£350
Placement of 6 implants in optimised positions based on the CT scan (3 days) £1,250 x 6	£7,500
Metal ceramic crown/bridgework replacing 7 teeth (2 days) £1,000 x 7	£7,000
Replacement of metal ceramic superstructure *at c15 yr intervals*	*£7,000*

MANDIBLE

Extraction of LR 5,4 and LL 4,5 (2 days)	£350
CBCT scan of mandible and analysis of images (1/2 day)	£300
Construction of a surgical guide stent for optimal implant placement	£350
Placement of 6 implants in optimised position based on the CT scan (2 days) £1,250 x 6	£5,000
Metal ceramic crown/bridge replacing 6 teeth (2 days) £1,000 x 6	£6,000
Replacement of metal ceramic crowns at c15 yr intervals	*£6,000*

Total Estimated Time Off Work: 24 days

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 that 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 Guidance for the Instruction of Experts 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.

11. In preparing and presenting this report I am not aware of any conflict of interest actual or potential save as expressly disclosed in this report.

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.

I understand that proceedings for contempt of Court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Philip R. Greene, BDS, FDSRCPS, CUEW.
DATE: …….