CROWNS, FIXED BRIDGES AND DENTAL IMPLANTS

GUIDELINES
Standards in healthcare are of fundamental importance. Evidence-based dentistry, audit and peer review are essential components of effective clinical practice.

To assist with these processes, the BSRD perceives a need for guidelines on acceptable levels of care in restorative dentistry. Some guidance is already available from our sister organisations, the British Endodontic Society, the British Society of Periodontology and the British Society of Prosthodontics, within their spheres of interest. This document is intended to act as a stimulus to members of the Society and to the profession to seek attainable targets for quality in fixed prosthodontics. It is hoped that this document from the Society will assist in the pursuit and maintenance of high standards of clinical practice.

These guidelines should not be considered prescriptive or didactic. Obviously, there will be circumstances, encountered during patient management, when the “ideal” treatment may not be possible nor the outcome optimal. In addition, new techniques and materials will become available which will bring about change. However, it is the Society’s belief that these standards can and should be the goal during management of the majority of clinical cases.

INTRODUCTION

ALTERNATIVES TO CROWNS AND FIXED PROSTHESSES

Modern dentistry offers many opportunities to provide direct and indirect restorations which satisfy aesthetic and functional requirements of patients without the need for significant, if any, tooth preparation. Veneer bonding, composite restorations, inlays, onlays and resin-retained bridges frequently have major roles in any treatment plan. Where teeth are minimally restored at the time of presentation, adhesive restorations are generally most appropriate. For example, in the management of the worn dentition, particularly that damaged by erosive substances, the use of full coverage crowns has little to commend it as the first option for treatment.

DEFINITION OF A FIXED BRIDGE

Any dental prosthesis that is cemented, screw retained or otherwise securely retained to natural teeth, tooth roots, and/or dental implant abutments that furnish the primary support for the dental prosthesis.

THE RATIONALE FOR THE USE OF:

CROWNS:

• To restore the form, function and appearance of teeth which are badly broken down, worn or fractured to the extent that simpler forms of restoration are contraindicated or have been found to fail in clinical service.
• To improve the form and appearance of unsightly teeth which cannot be managed by more conservative cosmetic procedures.
• To reduce the risk of fractures occurring in extensively restored teeth including endodontically treated posterior teeth.
• More rarely, to alter significantly the shape, size and inclination of teeth for cosmetic and functional purposes.
• To restore a dental implant.

FIXED BRIDGES:

• To replace one or more teeth of functional or cosmetic importance to the patient.
• More rarely, to prevent tooth movement and improve occlusal stability.

Tooth-supported bridges require the availability of sufficient abutments of appropriate quality and prognosis. Either in the absence of adjacent suitable teeth or when they would not benefit from restoration, implant-supported prostheses should be considered. Dental implants offer the ability of being able to tolerate tooth replacement without the need for modulating adjacent or contralateral edentulous areas. Where implant placement and restoration are complicated and the use of tooth-supported fixed bridgework is contraindicated the use of removable partial prostheses will require evaluation by both the dentist and the patient.

INDICATIONS

The decision to provide a crown or fixed bridge whether tooth or implant supported depends on many factors, including:

• The motivation and aspirations of the patient.
• The oral and general health of the patient.
• The condition of the remaining teeth and tooth tissues, the periodontal condition and oral hygiene maintenance.
• Analysis of the benefits, disadvantages and long-term consequences of providing a crown or fixed prosthesis.
• Complications which limit the likelihood of clinical success.
• The skill and experience of the clinician.

In all situations, the clinical advantages and long-term benefits of crowns and fixed bridges should justify such treatment and outweigh their disadvantages. They should only be undertaken in situations in which such advanced restorative care will clearly contribute to the oral health and welfare of the patient.

The replacement of failed crowns and bridges and the teeth or implants which support them should be conditional on an understanding of the aetiology and successful preventive management of the causes of failure.

Modern dentistry offers many opportunities to provide direct and indirect restorations which satisfy aesthetic and functional requirements of patients without the need for significant, if any, tooth preparation. Veneer bonding, composite restorations, inlays, onlays and resin-retained bridges frequently have major roles in any treatment plan. Where teeth are minimally or moderately restored at the time of presentation, adhesive restorations are generally most appropriate.

For example, in the management of the worn dentition, particularly that damaged by erosive substances, the use of full coverage crowns has little to commend it as the first option for treatment.

Dental implants may frequently be the treatment of choice when missing teeth are to be replaced. The biological cost to the patient is low when sufficient bone is available to house them.

The development of adhesive techniques and the predictability of dental implants reduce the need for the removal of sound tissue as part of restorative treatment.
AIMS

• To determine the patient’s requirements and expectations and to gain an informed opinion of the patient’s suitability for treatment involving the use of crowns or fixed prostheses.

• To obtain a history, which includes details of all previous conditions and experiences of relevance including information pertaining to any adverse reactions to treatment, the administration of drugs and the use of materials.

• A medical history is mandatory for all patients. Treatment involving the provision of dental implants should additionally include questioning regarding the following recognised risk factors:
  • Osteoporosis.
  • Bisphosphonate therapy.
  • Uncontrolled diabetes.
  • Smoking.
  • Radiotherapy.

Patients with medical conditions may still be treated with implants following advice from their physician.

• To complete a comprehensive clinical examination which will include a review of the clinical performances and made of failure of any existing restorations. This will require a diagnosis of existing disease and an assessment if the procedure has resulted in the need to provide restorations and prostheses.

• To analyse the effectiveness of the patient’s control of their own dental disease.

The clinical examination may be supported by special tests, which may include:

- Sensory testing of teeth.
- Radiographic examinations.
- Analyses of study casts mounted in a semi-adjustable articulator in an appropriate jaw relationship.
- Assessments of the patient’s response to initial instruction in oral hygiene procedures.

Other forms of special test may include:

- Dietary analyses.
- The use of diagnostic and provisional appliances.
- Direct observations of occlusal and masticatory function.
- Long-term monitoring against baseline study casts.

Diagnoses may take time to establish and require the use of additional special tests including dental investigations to stabilise or determine a prognosis for one or more teeth. Any case considered to be beyond a clinician’s capabilities and experience should be referred for further assessment, advice and possibly treatment.

Many clinical situations benefit from the involvement of additional dental specialists or those with particular skills. Such involvement should take place prior to the establishment of a treatment plan and may increase the options available to the patient. Implant-based treatment may be provided either by a single competent operator or by a team lead by a prosthodontist and including a surgeon. The need for interdisciplinary provision and restoration of implants is based on the complexity of the case and the skill and wishes of the dentist providing the restorative care. It is important that the whole dental team is knowledgeable about dental implants. Training of dental nurses, technicians and reception staff is mandatory.

ASSSESSMENT
**AIMS**
- To establish the diagnosis, relate clinical findings and treatment alternatives, together with the patient, and to define the nature and most appropriate sequence of events, to achieve a successful and of a shortened treatment objective.
- To devise a realistic treatment strategy which should:
  - Control and prevent further active disease
  - Be efficient and effective yet involving minimal oral intervention
  - Safely; the patient's expectations and requirements
  - Result in optimal outcomes and long-term benefits.
  - Minimise psychological trauma.
  - Facilitate any further treatment, and if required.
  - Take account of long-term maintenance.
  - To decide on the design and material(s) to be used in the construction of the crown or fixed bridge.

**DESIGN**
- The design for tooth-supported fixed bridge should:
  - Be as simple and conservative as possible, yet sufficient to support physical and mechanical requirements.
  - Avoid where possible using multiple. linked abutments.
  - Consider the use of dental implants as an alternative to tooth-supported fixed prostheses.
  - Establish clinical relationships and function, yet minimise adverse loading.
  - Encourage optimal tissue response and facilitate oral hygiene maintenance. Particular attention needs to be paid to the maintenance of embrasure spaces for oral hygiene.
  - Be realistic in terms of being affordable and achievable.

The choice of material(s) should:
- Allow the realisation of patients' cosmetic expectations, but not necessitate preparations involving excessive removal of sound tooth tissue.
- Facilitate optimal tissue response.
- Take account of:
  - The materials and tissues forming contiguous and adjacent contacts.
  - Technical considerations.
  - Be limited to those which satisfy the relevant standards.

Implant-supported crowns and fixed bridges should use an implant system which:
- Provides a variety of abutments.
- Has good company support for the provision of crowns and bridges.
- Has a universal implant for all bone types.
- Has protocols to allow single stage surgery, and alternative surgery for immediate placement, immediate loading, combined or some other form.
- Has a universal implant for all bone types.
- Allows ease of use with rationalised components.
- Has low start-up costs.
- Is affordable for the patient.

**Treatment planning is facilitated by:**
- Having demonstration models and diagnostic wax-ups to discuss with patients.
- The use of study casts to rehearse the detailed construction.
- The use of diagnostic wax-ups in conjunction with diagnostic casts of the proposed prosthetic result.
- Investigation of individual teeth and prepared in a legible form.

**CONSENT**
- It is important to obtain written informed consent for all forms of fixed/prosthodontic treatment. This should include a clear understanding of the financial cost of treatment.
- Consent may only be obtained following a full discussion of the proposed treatment with the patient.

**CLINICAL RECORDS**
- In common with all other documentation related to the patient, clinical records detailing the provision of crowns and bridges should be complete, unambiguous and prepared in a legible form.

**PREPARATORY MANAGEMENT**
- Preparatory management should, where indicated, include demonstrated completion of:
  - Bone of the jawbone resection.
  - Extraction of hopeless teeth.
  - Any necessary orthodontic treatment.
  - Any necessary surgical periodontal therapy.
  - Debridement occlusal adjustment or reduction in preparation.
  - Placement of dental implants if part of the treatment plan.
DENTAL IMPLANTS

SPACE REQUIREMENTS FOR DENTAL IMPLANTS

- There should be enough interdental and interocclusal space for an implant restoration.
- There should be enough space for the implant to be placed in the bone without compromising adjacent structures.
- Where implants are placed between teeth or adjacent to each other there should be sufficient space for an implant restoration.
- There should be adequate inter-dental and interocclusal space for crowns, fixed bridges and implants.

THE NUMBER AND POSITION OF IMPLANT PLACEMENT

- The number and positions of implants is influenced by the type of prosthesis provided, the quantity and quality of bone and the occlusal load expected.
- For edentulous patients the following may be a guide:
  - Fixed bridge
    - Maxilla – 4 implants
    - Mandible – 2 implants
  - Overdenture
    - Maxilla – 4 implants
    - Mandible – 2 implants
  - The implants should be placed as close as possible to the correct tooth positions.
  - A temporary healing implant for every missing tooth if long and stable implants can be placed.

SURGICAL PROTOCOLS FOR IMPLANT PLACEMENT

- The placement of dental implants is under constant development.
- The main aim of these developments is to reduce treatment times and improve patient care. It is important for the clinician to follow protocols produced by companies, or experienced teachers in the field of implantology.
- Drilling procedures should follow standard protocols. Initial stability is important for osseointegration.
- A surgical guide (template or site) is an essential surgical, surgical placement and the prosthetic stages to help with design of the superstructure. The guide helps with the positioning, angulation and angulation of single or multiple implants in the surgical bed.
- The surgical flap will be influenced by the extent of surgery, the presence of sinus and the experience of the operator. Larger flap will be needed to identify the mental or inferior dental nerve and during sinus lift procedures.
- "Flapless" surgery involves perforation of the mucosa at the implant site only, followed by the bone surgery and subsequent implant placement. The mobility is low and surgical time reduced. For this technique to be successful good bone volume needs to be present. The guide is placed with a CAD-CAM produced surgical drilling guide based on a CT scan.
- Preservation of the gingiva or attached mucosa is important for the "immediate implant" and aesthetic result. Soft tissue surgery, possibly including free or pedicle grafts, may be required.

VERIFICATION OF IMPLANT POSITION

- Where there is poor initial stability on placement.
- Where bone augmentation has been performed.
- Where there is peri-radicular infection or pathology.
- Healing times refer to the time that osseointegration.
- Healing times should be lengthened if there is evidence of peri-radicular infection or pathology.
- A safe healing time in the mandible would be two to three months and three to four months in the maxilla.
- Healing times are under constant review.

IMMEDIATE PLACEMENT

- The temporary crown or prosthesis is attached to the implant immediately after surgical placement of the implant.
- It can be employed for a single tooth, multiple tooth spans or a full arch.
- It is important that good primary stability of the dental implant is achieved.
- Occlusal loading must be controlled.

IMMEDIATE LOADING

- The temporary crown or prosthesis is attached to the implant immediately after surgical placement of the implant.
- It can be employed for a single tooth, multiple tooth spans or a full arch.
- It is important that good primary stability of the dental implant is achieved.
- Occlusal loading must be controlled.
- This treatment can be successful in the anterior mandible.
- Longer spans or full arch restorations require multiple stable implants.

CERAMIC OR SCREW-RETAINED RESTORATIONS

- The decision on whether to provide a restoration that is cemented or screw-retained depends on the following factors:
  - Appearance.
  - Security of fixation.
  - Maintenance of the implant.
  - Cost.
- A screw-retained prosthesis may have a shorter survival rate but provides the most secure retention and simplifies any future maintenance. The clinician should understand that the implant may prevent the use of screw-retention of the restoration.
Shade determination should involve consideration of the hue, chroma and value for the body, cervical and incisal portions of the proposed crown and bridge. This should involve:

• Use of a neutral colour environment.
• A shade guide familiar to the technician and appropriate for the tooth-coloured materials to be used.
• Assessments under differing lighting conditions.
• An initial rapid scan of the guide against the teeth to be restored, followed by short duration (5 s) assessments of the suitability of possible shades.
• Time (15-30 s) spent between assessments looking at a blue background colour to minimise the influence of negative after-images.

Shade determination is best completed pre-operatively to minimise errors related to lens fogging, dehydration of teeth and apparent shifts in shade following the removal of tooth tissues. Details of features such as areas of opacity and translucency, cracks and any special staining effects required should be recorded as part of the shade determination.

A written and diagrammatic prescription will facilitate the transfer of information between the dentist and the technician.

Where appropriate, the patient and, whenever possible, the technician who will construct the restorations should participate in the completion of the prescription of colour and form. Clinical photographs may be of value in assisting a technician who is unable to examine the patient in person. Electronic shade determination using scanning devices may be helpful but an appreciation of their limitations is required.

Where teeth are to be replaced, the use of a diagnostic wax-up is beneficial and may be used to construct a provisional prosthesis to facilitate patient and dentist understanding of the final form of the restoration prior to beginning definitive prosthetic treatment.

In the case of implant-supported restorations and some tooth-supported fixed prostheses, the contours of the provisional restoration may be used to develop soft tissue form adjacent to the crown or fixed prosthesis.

Principal considerations:

• Conservation of tooth tissues.
• Control of the path of insertion.
• Optimal retention and resistance forms.
• Appropriate clearance in occlusal and articulation.
• The removal of adequate tooth tissue to allow the manufacture of restorations with appropriate contours and aesthetics.
• The retention of basic-occlusal well anti-occlusal form.
• The removal for well-defined margins of appropriate design, whenever possible on supra-occlusal, sound tooth tissue.
• Damage limitation through the use of atraumatic techniques.

All preparations should be planned taking account of access and with reference to radiographs and study casts.

Clinical photographs may be of value in assisting a technician who is unable to examine the patient in person. Electronic colour determination using scanning devices may be helpful but an appreciation of their limitations is required.

If pulp vitality/integrity of the tooth is likely to be put in jeopardy by the extent of the preparation required, then additional preparatory treatment involving orthodontic realignment or elective root canal therapy may be indicated. Specific consent must be sought prior to elective root canal therapy.

When it is intended to remove a finite amount of tooth tissue a guide or preoperative index is a valuable aid to avoid excessive preparation.

Determinations regarding the form and dimension of preparations should take account of:

• Tooth morphology and anatomy.
• The quantity and location of remaining tooth tissue responsible for the retention of existing restorations including roots.
• Occlusal relationships and function.
• The need for realignment.
• Relationships with adjacent teeth and soft tissues.

The material(s) to be used.

• Considerations of long-term sequelae.
• Aesthetic requirements.

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**IMPRESSIONS**

**PURPOSE**

To achieve accurate, dimensionally-true, fully-supported impressions of the prepared teeth, any dental implants and associated soft tissues.

**GUIDELINES**

- The impression materials used should conform to relevant standards.
- If more than one material is used, each must be understood by the dentist and technician.

**IMPRESSION MATERIALS**

- Impression materials should be selected to meet the specific requirements of clinical situations on the basis of their physical properties and handling characteristics.
- The impression materials used should conform to relevant standards.
- If more than one material is used, each must be understood by the dentist and technician.

**MATERIALS**

- In the set state, all impression materials must be able to withstand the decontamination procedure.
- Impression materials must be able to be positioned or applied as required.
- Impression materials should be handled, decontaminated, protected and stored with the same care adopted for master impressions.
- Completed impressions should be protected and stored with the same care adopted for master impressions.
- Impression materials must be used in strict accordance with the manufacturer's instructions.
- The use of any necessary impression coping or device is to allow opposing casts to be in harmony with existing jaw relationships.

**TECHNIQUE**

- The patient should be instructed and the desired position of the mandible.
- The registration material should be positioned or applied as required.
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PURPOSE
Temporary restorations:
To restore, protect and maintain the position of prepared teeth between appointments and until the placement of the final restoration.

Interims:
Interim prostheses may be required to maintain form and function during treatment involving the use of dental implants. Tooth-supported prostheses are preferable in this respect.

QUALITIES
Provisional Restorations:
Temporary restorations may also be used to test form and function and develop soft tissue contours adjacent to the restoration; these are more appropriately termed “provisional restorations”. Provisional crowns and bridges should incorporate most of the qualities of the final restorations which will replace them. These should include:

• Restoration, or where indicated, improvements in tooth form and function.
• Marginal adaptation and seal.
• Minimal tissue response and favourable hygiene features. Care needs to be taken to ensure a good quality of marginal fit without ledges and an adequate reproduction of embrasure space to facilitate oral hygiene.
• Fracture and wear resistance sufficient for anticipated time in clinical service.
• Properties which serve to protect the health of the underlying dental tissues.
• Functional comfort and control of sensitivity.
• Acceptable appearance.

TECHNIQUE
There is much to commend a replica technique for the fabrication of provisional crowns and bridgework in situations in which tooth form and function should remain unchanged. However there are a number of methods which may all give acceptable results. Practitioners nonetheless need to be aware of the advantages and limitations of the method selected.

When planning a significant change in form or function the diagnostic wax-up can be used to produce an index for the production of provisional restorations. This approach allows the clinician to assess the patient’s response to the proposed changes prior to the construction of the definitive restoration.

During the fabrication and placement of provisional crown and bridgework care is required to ensure:
• Occlusal accuracy.
• Maintenance of pulp and periodontal health.
• Good marginal adaptation.
• Temporary and provisional restorations should be cemented to the teeth with a material that provides an adequate marginal seal but has physical properties that allow removal of the provisional restoration without damage to underlying prepare.
PURPOSE
To confirm the clinical acceptability of completed or partially completed crowns or fixed bridges in terms of:
- Seating and marginal adaptation.
- Contacts and relationships with adjacent and opposing teeth.
- Form.
- Aesthetic qualities.
- Patient acceptance.

PRINCIPLES
- Prior to an appointment for try-in, the restorations should be carefully inspected, together with the master casts and when available the impression of the preparations, to confirm satisfactory completion of the laboratory work.
- Assessment of the acceptability of restorations, at the time of try-in, may be facilitated by the use of magnification or radiographs for implant-supported restorations.
- Any minor adjustments or further laboratory instructions are generally best completed while the patient is still present.
- If a crown or bridge is considered to be unsatisfactory at try-in the cause of the problem should be identified before modifying or remaking the item.
- Consideration should be given to temporarily cementing crowns and bridges which, for example, alter vertical face height or change aesthetics or occlusal functional relationships despite satisfying immediate criteria for clinical acceptability.
- Having patients confirm the comfort and their acceptance of the appearance of crowns and bridges should be considered a routine element of try-in procedures.

LABORATORY PRESCRIPTIONS
- The clinician’s name, practice address and contact telephone/fax number(s) or e-mail address.
- Details of the patient.
- Name, address and reference number.
- Age.
- Sex.
- Any relevant photographic records available.
- Relevant aspects of the social history.
- Summary of the treatment being undertaken.
- Overall plan.
- Stage of treatment.
- Present work.
- Subsequent care.
- Details of the teeth and/or implants involved (number/notation), the type of crown or prosthesis to be constructed, the design for any dentures to be constructed/provided and, where appropriate, information regarding contingency and long-term planning should be given.
- Date and time of recording impressions.
- Date and time for latest return of completed laboratory work.
- A comprehensive statement of type of alloy and other materials to be used.
- A detailed description of the design features for the crown or bridge, including proportions, form and function, rest and non-rest tooth contact, pontics.
- Materials to form margins and occlusal contacts.
- Shades and characterisation.
- Surface texture and finish.
- A description of the occlusal registration(s) provided.
- Miscellaneous clinical observations and specific patient requests.
- The use of labelled diagrams together with study casts, diagnostic wax-ups and impressions of temporary or permanent restorations greatly facilitates communication.
- Clinical photographs may aid the technician in the design of crowns, particularly with aspects of form and surface texture but should not be relied upon to communicate colour accurately.

TRY-IN
- Consideration should be given to temporarily cementing crowns and bridges which, for example, alter vertical face height or change aesthetics or occlusal functional relationships despite satisfying immediate criteria for clinical acceptability.
- Having patients confirm the comfort and their acceptance of the appearance of crowns and bridges should be considered a routine element of try-in procedures.
TOOTH-SUPPORTED RESTORATIONS

AIM

To cemented crowns and bridges considered to be satisfactory by both the operator and the patient at the time of try-in or following a period of temporary use. The final placement of tooth-supported restorations has a number of common elements but also significant differences.

The final restorations must be allowed to harden in situ (without the use of undercuts or retention form) during the critical initial set or polymerisation time. All the special precautions may be regarded as too severe and protect the luting material used.

Where the excess luting material should be removed using instruments and techniques that do not result in contamination of plug-guts. Generally cemented crowns and bridges must be examined with particular regard to:

- Degree of seating.
- Proximal contact and relationship with adjacent and opposing teeth.
- Occlusal surface. Where indicated, suitable adjustments should be completed, including filling of roughened areas.

IMPLANT-SUPPORTED CROWNS AND FIXED PROSTHESSES

Before delivering a patient, following the placement of crowns and bridgework, suitable instructions should be given regarding immediate care, action to be taken in the event of post-operative pain or discomfort, and appropriate oral hygiene maintenance.

INITIAL REVIEW

To assess the patient’s response to the restoration(s) selected and any postoperative difficulties, concerns, pain or discolouration which arise after placement.

PROCEDURE

- During the initial review, attention should be paid to patient saturation and comfort.
- Functional contact and relationships with adjacent and opposing teeth should be checked.
- Routine should be made of the initial issue-responses and the feedback of the patients and oral hygiene maintenance in relationship to the restorations.
- Where indicated, suitable adjustments should be completed with all surfaces accurately finished.
- Where indicated, further instructions and advice should be given regarding long-term hygiene measures.

LONG-TERM REVIEW

- Follow-up of implant patients in just as important as for those who have received tooth-supported crowns and bridgework. Radiographs are advisable one year following treatment to check that coronal bone levels have been maintained. All patients should be reviewed at least annually. They should be encouraged to return to the provider of the implant treatment if they feel that there has been any deterioration.

FINAL PLACEMENT OF RESTORATIONS

OF RESTORATIONS

FINAL PLACEMENT

GUIDELINES

- The fit-surface finish of the crowns and bridges must be checked and isolated, and where indicated,primed and conditioned as required by the cement selected. The luting system should be dispensed, mixed and applied in strict accordance with manufacturer’s instructions whilst the operating field is being cleansed and prepared.

The final restorations must be fully seated within the available working space. The luting system should be chosen to overcome the effects of hydraulic pressure. While it is highly desirable to use a cement system with a critical initial set or polymerisation time, it is of particular importance to ensure that no excess cement is left in the lute. The nature and condition of the preparations should be paid to patient oral hygiene maintenance in interproximal or subgingival sites.

Cementation should be completed, where indicated, during the initial review, attention being paid to patient satisfaction and comfort.

Care needs to be taken during long-term reviews to ensure that the cement remains intact for all tooth- supported indirect restorations. The fit of the implant treatment if they feel that there has been any deterioration.

To monitor clinical performance and any deterioration in acceptability, detailed records should be kept of clinical observations made during reviews of crown and bridgework. When a dental hygienist or other dental care professional is part of the dental team undertaking long-term care of crowns and bridges, briefing notes must be given regarding the specific maintenance issues and potential modes of failure.

For all restorations.

• The fit-surface finish of the restorations must be checked and isolated, and where indicated, primed and conditioned as required by the cement selected. The luting system should be dispensed, mixed and applied in strict accordance with manufacturer’s instructions whilst the operating field is being cleansed and prepared.

• The final restorations may be screw-retained or cemented to an abutment attached to the implant.

• Screws should be tightened using a torque wrench according to the manufacturer’s recommendations.

• Degree of seating.

• Proximal contact and relationship with adjacent and opposing teeth.

• Occlusal surface. Where indicated, suitable adjustments should be completed, including filling of roughened areas.

• The screw hole is restored with a direct restorative material.

• The nature and condition of the preparations should be paid to patient oral hygiene maintenance in interproximal or subgingival sites.

• Care needs to be taken during long-term reviews to ensure that the cement remains intact for all tooth-supported indirect restorations. The fit of the implant treatment if they feel that there has been any deterioration.

 crowns, fixed bridges and implants - essential 21
The provision of crowns and fixed bridges to a high standard is an exacting task for the whole dental team, clinician, technician, nurse and other support staff, as well as for the patient. Provision of high-quality crown and bridgework accompanied by excellent maintenance can produce long-term success which is rewarding for both the patient and the dental team.

The Society hopes that these guidelines are helpful and act as a practical reminder of the standards that we try to achieve. Guidance notes are never complete, and these are no exception. The Society will be reviewing this document at regular intervals for accuracy and in the light of contemporary thinking. Any comments you may have would be gratefully received and should be addressed to the Honorary Secretary of the Society.

Richard Ibbetson
Ken Hemmings
Ian Harris

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