Amalgam Restoration

- Obtain consent and confirm the tooth to be restored
  - This is good practice as patients change their mind about the chosen restorative material.
- Check caries extent and previous restoration status on the radiograph
- Mark ICP points with 8-20 micron articulating paper and photograph the occlusal surface. Administer LA if needed and place rubber dam
  - A split dam technique is advised for deep proximal caries and adjacent interproximal caries. Rubber dam can be placed after cavity preparation to prevent tearing of the dam.
- Gain access to caries with a fast hand piece (*See page 94*)
  - Brown, soft, wet dentine should be removed. As long as the ADJ is caries free, dark and hard dentine can be left over the pulpal floor (selective caries removal, MID technique).
- Clear the ADJ of caries, preferably with a slow hand piece
- Use a slow hand piece and rose head bur to remove softened dentine from the axial walls and pulpal floor
  - Reduces internal stresses and chance of fracture and ditching. Gives better retention. Ensure a minimum depth of 2mm occlusally and 1mm elsewhere.
- Modify cavity: round internal line angles, 70-90° cavo-surface angle and undercut preparation, keyhole preparation
- Dry and inspect the cavity. Consider pulp protection in deep cavities
  - **Indirect pulp cap:**
    Materials of choice includes calcium-silicate dentine substitutes (e.g. Biodentine) and MTA. CaOH has traditionally been used as a liner, however, there is low evidence to suggest its use in deep carious lesions is effective in preserving pulp vitality. Biodentine is injected over a deep cavity to the cusp level. Leave for 9-12minutes to allow full set. If there is an exposure, it can be left for up to 6months, then cut back and restore with a bonded restoration. Otherwise, a same-day restoration is sufficient.
- For multiple surface cavity- apply and adapt a matrix band with a ball burnisher and place a wedge
- Mix and place amalgam, slightly overfilling the cavity. Compact with a plugger
  - Ensure amalgam is well condensed.
- Use a cotton wool roll to brush off excess and level. Use a straight probe to remove excess from the periphery of the matrix band, loosen and gently remove it
  - The marginal ridge is prone to fracture upon removal of the matrix band. To prevent this, apply light pressure to the marginal ridge with a burnisher.
- Check the occlusion and guidances – adjust. Allow the amalgam to set for at least 24 hours prior to polishing (with green and brown stones) until the patient is happy
  - Use 8-20 micron articulating paper in holders. Compare the occlusion to pre-op photographs.