Denture Material Selection

Factor	Considerations
Number of teeth being replaced	• Acrylic dentures achieve greater aesthetics when replacing a single anterior tooth. • Large free end saddles benefit from mucosa borne support. • It is difficult to incorporate sufficient retention and support in Cobalt Chromium dentures when an insufficient number of abutment teeth remain.
Ridge Assessment	• Resorbed ridges provide suboptimal support – if acrylic is being considered, extend the flange to the external oblique ridge. For CoCr, incorporate more rest seats into the design.
Prognosis of remaining teeth	• It is difficult to make additions to Cobalt Chromium whereas acrylic dentures are easier to modify. • Periodontally compromised/heavily restored teeth are unlikely to survive as abutments for Cobalt Chromium dentures. • For Cobalt Chromium dentures, careful restorative planning of compromised teeth is required. Indirect restorations can be incorporated into the denture design e.g. rest seats, milled ledges, guideplanes and undercuts.
Medical history	• Allergies e.g. to Nickel Chromium • Dry mouth – difficult to achieve a peripheral seal with acrylic dentures • Cleft lip and cleft palate obturators are made of acrylic
Patient corporation	• Ability to insert and remove the denture • Poor oral hygiene puts the patient at an increased caries and periodontal risk
Intended duration of use	• It is costly to provide Cobalt Cobalt as a temporary denture
Previous denture experience	• Changing the denture material may be indicated if the patient has had multiple bad experiences.
Cost	• Cobalt Chromium is more expensive than acrylic.

	Cobalt Chromium	Acrylic
Strength	• Greater	• Lower
Comfort	Greater: • Thinner skeleton (as stronger) • Less bone resorption and tissue change under the denture • Greater support • Minimal palatal coverage • Greater temperature conductivity	Lower: • Increased thickness to compensate for lower impact strength • More palatal coverage (for support) • Lesser temperature conductivity
Retention	• Can incorporate CoCr, gold, acrylic and stainless steel clasps • More accurate fit improves retention	• Good with appropriate case selection: • Dependent on the border seal and an accurate fit • Can incorporate stainless steel Clasps
Construction accuracy	• Greater - Metal prevents warpage during processing	• Reduced
Addition	• Difficult to make additions, only suitable for cases with good long term abutment prognosis	• Easier to modify and add teeth
Repair	• Difficult and costly to accurately solder any fractured clasps/parts	• Easier to modify
Cleansability	• Oral hygiene is easier as CoCr is less porous	• Less cleansable due to the porous nature of acrylic
Cost	• Greater	• Lower