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| **Adhesive and Cohesive Mechanisms** | * Mechanical Interlocking
	+ Relates to an adhesive moving not pores or around projections in the adherend surface
	+ Good tissue penetration improves mechanical interlocking and is influenced by the rheological properties of the adhesive
	+ Can be influenced through topographical modification
* Molecular Bonding
	+ Common primary adhesive and cohesive interactions include Schiff base formation and amide bonding
	+ Common secondary interactions include
	+ π-π stacking, hydrogen bonding, dipole-dipole interactions and Van der Waals instantaneous dipoles
	+ Cross-linking density is a large determinant of cohesive strength
* Electrostatic Bonding
	+ Formation of dispersion forces as a result of interactions between permanent dipoles
	+ Not a major contributor of adhesive strength in tissue sealants
* Chain Entanglement
	+ Refers to a polymers ability to tangle with other polymer chains
	+ Increased flexibility and length of polymer chains allows for greater interpenetration and entanglement
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| **Bio-functionality** | * Mechanical and Physical Properties
	+ After application the adhesive should support local and organ specific cellular interactions
	+ The desired mechanical and physical properties should mimic local tissue
* Curing Time
	+ Desired curing time will depend of clinical application
	+ Research is being undertaken into controllable polymerisation but is not used in commercially available products
* Degradation Kinetics
	+ Can affect post-operative stability of an agent
	+ Rapid kinetics can lead to post-operative complications such as dehiscence
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| **Biocompatibility** | * Toxicity
	+ Agents should pose negligible toxicity to the host
	+ Toxicity of the agent, as well as metabolic products, should be assessed at a cytological, histological and systemic level
* Immunogenicity
	+ Biomaterials should not be immunogenic
	+ Humoral and cytotoxic responses as well as local tissue reaction should be assessed
* Gluing Process and Post-operative changes
	+ A mild gluing process is favoured to avoid damage to surrounding tissues
	+ Hydrophilic agents can expand in vivo and affect local tissue
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| **Economic** | * Tissue adhesives should be cost-effective
* ICER can be a useful tool in presenting these economic analyses
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