

The placement of fibre post health and social care essay

[Health & Medicine](#)



**ASSIGN
BUSTER**

\n[[toc title="Table of Contents"](#)]\n

\n \t

1. [6. 1. 2. Non-Metallic Posts](#) \n \t
2. [6. 1. 2. 1. Carbon fibre station](#) \n \t
3. [6. 1. 2. 2. Glass Fibre Post](#) \n \t
4. [6. 1. 2. 3. Zirconia station](#) \n \t
5. [6. 2. Custom Cast Post](#) \n

\n[/toc]\n \n

The arrangement of fiber station is a good pick for root treated teeth non merely because it strengthens the tooth but because it helps us to construct a probationary or unequivocal Restoration. The fibre stations can be a stuff of pick where aesthetic is the demand. They have high tensile strength and a modulus of snap similar to that of dentine. The fiber station is a inactive station which does non actively prosecute with dentine, hence adhesives and rosin cements are required to repair fibre stations in topographic point.

However, adhesion of fibre stations depends on assorted factors including the features of root dentine, type of rosin cement, type of visible radiation, strength of visible radiation and the continuance of visible radiation. In an effort to get the better of these jobs, dual-cure rosin cements and adhesives are the stuffs of pick for adhering fibre stations with root dentine. However, few of the double remedy rosin cements still depend on visible radiation for their activation. To let the visible radiation to perforate in the internal facet of the root, glass fiber stations and quartz fiber stations are used as they allow the transmittal of visible radiation to the deepness of the root canal

therefore letting the rosin cements to polymerise deep in the canal. Several <https://assignbuster.com/the-placement-of-fibre-post-health-and-social-care-essay/>

surveys have been performed to measure the grade of polymerisation or transition values of resin cements but most of these surveys used the microhardness trial instead than the more dependable Fourier transform infrared trial (FTIR) . Furthermore, most of these surveys were non performed in the root canals.

The success of endodontic intervention non merely depends on the quality of intervention but besides on the quality of prosthetic device being placed to reconstruct the losing tooth construction. The structural loss of the tooth due to trauma, caries or both makes the tooth more prone to break. Therefore, station is placed in a prepared root canal infinite of a tooth with heavy structural loss to counterbalance for the loss of tooth construction. Some writers and clinicians suggest that the station provides strength to the tooth, while others suggest that the station makes the tooth weak due to the readying of the station infinite. However, many surveys support that the station should be placed in a tooth with heavy loss so that it can supply keeping for meantime or concluding coronal Restoration. Ideally, the station should hold the undermentioned belongings:

By and large, a station is placed into a tooth to retain a nucleus. A tooth which is to a great extent broken down frequently requires a station as the being tooth construction is deficient and weak to retain the coronal Restoration. However, the readying of station infinite causes unneeded tooth devastation which may take to tooth break. Therefore, the arrangement of station should be considered where other options are non convenient. The determination to utilize a station depends on the staying tooth construction,

place of the tooth in the dental arch and the functional demand of the tooth. A categorization described by Peroz in 2005 was formulated to measure the sum of staying tooth construction.

Tooth with 1 axial wall missing is referred as category II normally known as Mesio-Occlusal or Disto-Occlusal pit, while tooth with 2 losing axial walls is described as category III normally known as Mesio-Ocluso-Distal (MOD) . If the staying axial walls in category II and III are greater than 1 millimeters so a station is non normally indicated as there is sufficient coronal construction nowadays to back up the Restoration. A survey performed by Steele and Johnson in 1999 showed addition in fracture opposition of category II and category III when they were restored with composite and amalgam merely.

Class IV is described as a tooth holding merely 1 axial wall left. There is no addition in break opposition when a Restoration is placed. Therefore, arrangement of station is normally suggested in such scenarios. However, esthetically, non-metallic stations are preferred for anterior dentitions while for posterior dentitions either metallic or non-metallic station can be inserted.

A tooth which has no staying axial wall or a tooth which is wholly decoronated is described as Class V. The interpolation of station becomes necessary in such instances as there is non adequate tooth construction which can back up the coronal Restoration. Furthermore, the collet plays an of import function in defying break in such type of instances. Ferrule is defined as a set of metal that wholly encircles 1-2 millimeter of sound tooth

construction which resist longitudinal break. In 2001, Bolhuis stated that the crown collet is more of import than the station and nucleus.

Metallic stations are strong and stiff, normally made of unstained steel, nickel Cr metals, Ti, Ti metals or gold plated brass. Stainless steel has a long history of use but it can do nickel sensitiveness in females due to the presence of Ni. Furthermore, Stainless steel can eat over clip. Therefore, Ti stations were introduced to get the better of corrosion. However, Ti and Ti metals have hapless compressive and flexural strength as compared to stainless steel, therefore they can non be used in thin roots. In add-on, Ti station may be hard to observe on radiogram due to similar denseness as that of gutta-percha and sealant.

6. 1. 2. Non-Metallic Posts

Historically, during the old ages 1603 - 1867, Nipponese restored dentitions with wooden station and nucleus. However, due to hapless strength and break of wooden station, cast metal stations were introduce. In 1988, Duret came with the thought of non-metallic station and was deployed in Europe in the 1990s. Fibre stations can be smooth or serrated depending on their surface features.

6. 1. 2. 1. Carbon fibre station

Carbon fiber stations are besides called C fiber-reinforced epoxy rosin stations. They consist of epoxy rosin which is reinforced with unidirectional C fibers parallel to the perpendicular axis of the station. The C fibers are made by the remotion of H, N and O from polyacrylonitrile by heating at 250C in air, followed by heating at 1200C in inert ambiance. The diameter of each

<https://assignbuster.com/the-placement-of-fibre-post-health-and-social-care-essay/>

fiber is 7-10µm, while harmonizing to weight, the fibers constitute upto 64 % of the entire weight of the station. Originally, C fiber stations were black in colour, but due to esthetic consciousness they are available in white colour besides. Furthermore, these stations were originally radiolucent but now they are available as radiopaque besides. Main advantage of C fiber station is the ability to successfully bond to dentine and modulus of snap similar to dentine i. e between 1- 4-106 pounds per square inch. Many Studies have shown increased strength of C fiber stations, while other surveies suggest their strength is less when compared with metal stations. Furthermore, few surveies have shown that C fiber station increase the fracture opposition of tooth, while other surveies report the opposite. In 2007, Ferrari reported 7. 2 % of clinical failure rate of C fiber stations after 7-11 old ages. Failures were largely due to root break, crown debonding, periapical infection and periodontal disease. However, different surveies show different failure rates.

6. 1. 2. 2. Glass Fibre Post

Due to dark colour of C fiber station, glass fiber stations were introduced. These stations are besides called fiber-reinforced epoxy rosin stations and are made up of glass or silicon oxide. Different types of glass can be use to do glass fiber station including vitreous silica fiber, electrical glass or high strength glass. However, the strength of the station depends on higher content of glass fibers. In a clinical survey, Ferrari (2000) placed 249 glass fiber station and observed 4. 4 % failure rate over a period of 6 old ages. Another survey performed by Cagidiaco in 2007 showed 7. 4 % failure after 2 old ages. Furthermore, Naumann (2007) placed 41 glass fiber station and found no failure during 3 old ages. Most common failure were relaxation of

<https://assignbuster.com/the-placement-of-fibre-post-health-and-social-care-essay/>

the stations, periapical infection, tooth break, debonding of Crown and break of stations.

6. 1. 2. 3. Zirconia station

In 1995, mayenberg introduced zirconia station with a flexural strength of 900-1200 MPa. Zirconia stations have high break stamina, high strength and corrosion opposition and are made up of tetragonal polycrystalline zirconium oxide with 3 % mol Y oxide (Y_2O_3) called Yttrium-stabilized tetragonal polycrystalline zirconium oxide (Y-TPZ) . Y-TPZ is 0. 5 μ m in diameter, supplying smoothness and stamina to the joggle. However, due to smooth surface, the station does non organize a good bond with composite rosin and all ceramic Crowns. Furthermore, there was no addition in bond strength even after the station was acid etched or salanized. Matinlinna (2004) stated that bond strength between station and composite rosin can be increased by tribochemical silicon oxide coating. The chief drawback of zirconium oxide station is that it can non be retrieved as it can non be grinded and supersonic remotion consequences in temperature rise. In 2004, Paul evaluated 145 zirconium oxide stations over a period of 9 old ages and reported no clinical failure when a direct composite Restoration with zirconium oxide station was placed, while there was 9 % failure in joggles with glass-ceramic nucleus Restorations. All failures were due to post debonding.

6. 2. Custom Cast Post

The most normally used stuff for usage station is cast gilded metal holding a comparable thermic enlargement and modulus of snap (14. 5-106) to

enamel. Furthermore, it is strong plenty to bear occlusal forces. However, arrangement of usage dramatis personae station require multiple visits and due to metal demoing from ceramic Restoration, the esthetics are compromised. Silver-palladium metals and high Pd content metals are besides used for usage dramatis personae station but they have inferior mechanical belongings when compared with gold metals. Custom cast stations may be indicated when misaligned teeth require stations, inability to present antirotational characteristics in dentitions with less coronal construction or multiple dentitions necessitating stations. In 1989, Bergman reported 91 % success rate of usage dramatis personae station after 6 old ages.