

Creating Esthetic Restorative Success



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Esthetic and function being equal concerns when restoring the anterior dentition, one may question the biomechanical behavior of single teeth restored with extremely resistant restorations, as is the trend with most recent ceramic systems. The excessive strength of conventional prosthetic restorations such as gold and metal ceramic crowns can yield root fractures, which are very difficult to restore. The modulation of the strength of the tooth-restoration complex should be therefore considered to avoid stress transfer and catastrophic failures at the level of the root. The combination of both composites and ceramics seems theoretically appropriate to reproduce the original stiffness of the tooth and modulate the tooth-restoration strength. Therefore, modern concepts in restorative dentistry have brought new solutions through bonded ceramics that are stress distributors and involve the crown of the tooth as a whole in

supporting occlusal force and masticatory function. Among these, the good overall clinical behavior of porcelain laminate veneers bonded tooth in terms of fracture rates, microleakage, debonding and soft tissue response is generally well recognized and attested by numerous clinical studies. Continuous developments in the field of adhesive restorative techniques have permitted significant broadening of the originally-defined spectrum of indications for ceramic bonded restorations and thus contribute to two of the major objectives of conservative restorative dentistry: the maximum preservation of sound tooth structure and the maintenance of the vitality of the teeth to be restored. Indications for bonding porcelain are extending to more perilous situations (worn-down, nonvital or crown-fractured teeth), resulting in considerable improvements, comprising both the medical-biological aspect and the socio-economical

context (ie, decrease of costs when compared to traditional and more invasive prosthetic treatments). Knowledge of biomechanical principles and tooth preparation techniques is fundamental to create optimum conditions for the dental ceramist in the fabrication of the porcelain work piece. The meticulous application and handling of modern composite resin technology including dentin adhesives of the latest generation will, in turn, guarantee the reliability and longevity of the bonding. The optimal stiffness of

porcelain, the ideal surface characteristics, and the biomechanical continuum achieved through high performance bonding mean the crown of the tooth as a whole can support incisal or masticatory function. By the same token, the conduction of optical effects from within the tooth combined with the ideal surface features of the porcelain piece make this restorative approach the ultimate in esthetic satisfaction, for both the practitioner and the patient.