

From Occlusal Splints to Implants: Prosthodontic Solutions for Temporomandibular Joint Disorders

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DESCRIPTION

Temporomandibular Joint Disorder (TMD) affects the structures involved in jaw movement, including the Temporomandibular Joint (TMJ), which connects the jawbone to the skull and the muscles that control chewing. Common symptoms of TMD include jaw pain, clicking or popping sounds when opening the mouth, limited mouth opening, headaches, earaches and a feeling of locking or discomfort in the jaw. The causes of TMD are multifactorial and may include structural issues, such as misalignment or damage to the disc in the TMJ, as well as functional problems, such as malocclusion, bruxism (teeth grinding), or postural abnormalities. Stress and psychological factors can also exacerbate TMD, leading to muscle tension and joint dysfunction. Prosthodontists play a major role in diagnosing and managing TMD by restoring the function of the occlusion and minimizing the symptoms associated with the disorder.

The primary goal of prosthodontic treatment for TMD patients is to address the occlusal and functional issues contributing to their symptoms. A detailed diagnosis is essential to determine the cause and severity of the disorder. This often involves a thorough clinical examination, including assessment of the TMJ, muscle tenderness and jaw movement. Radiographic imaging, such as panoramic X-rays or MRI, may also be used to evaluate the health of the joint and its surrounding structures.

Once a diagnosis is established, the treatment plan focuses on improving occlusal relationships, relieving muscle strain and stabilizing the TMJ. A common approach for TMD management is the use of occlusal splints or bite guards, which are custom-made appliances designed to protect the teeth from grinding and to help reposition the jaw to reduce pressure on the TMJ. These splints are particularly beneficial in cases where bruxism or malocclusion is contributing to the TMD symptoms. Occlusal splints help in achieving a more balanced bite and provide temporary relief from jaw pain by allowing the muscles and joints to relax during sleep or throughout the day.

For patients with more advanced cases of TMD, particularly those with severe malocclusion or structural abnormalities, full-

mouth rehabilitation may be necessary. This involves restoring the occlusion through crowns, bridges, or implants to achieve a more functional and comfortable bite. In some cases, orthodontic treatment may be required to correct bite misalignments before prosthodontic restoration. By realigning the teeth and improving the occlusion, these treatments help to alleviate undue stress on the TMJ and improve the patient's overall comfort.

A key aspect of prosthodontic treatment in TMD management is the restoration of an optimal occlusion. Occlusal imbalance, such as an overbite, underbite, or crossbite, can cause uneven forces on the TMJ and lead to muscle strain and joint dysfunction. Restoring proper occlusion is critical in minimizing stress on the TMJ and preventing the progression of TMD symptoms. In many cases, restorative crowns or veneers may be used to reshape and realign the teeth, improving the bite and reducing the pressure placed on the joints.

In addition to improving occlusion, dental implants can play an important role in the treatment of TMD, especially for patients who have lost teeth due to the disorder. Missing teeth can lead to uneven bite forces and compensatory muscle movements, which can exacerbate TMD symptoms. Implants provide a stable foundation for crowns or bridges, helping to restore the integrity of the occlusion and promote better jaw function. For patients who have experienced severe joint degeneration or bone loss, implants may be used in conjunction with other prosthetic devices to enhance the stability and function of the entire masticatory system.

Another advanced prosthodontic option for TMD patients is the use of full-arch restorations, which may include implant-supported prostheses. These restorations are particularly helpful for patients with complete edentulism or those suffering from extensive damage to the teeth and surrounding structures due to TMD. Full-arch restorations provide a comprehensive solution to restore both the aesthetics and function of the dentition while minimizing the risk of further joint stress.

Pain management is a central concern in the treatment of TMD. Prosthodontists collaborate with other healthcare professionals,

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including physical therapists, oral surgeons and pain management specialists, to develop a multidisciplinary treatment approach that addresses both the mechanical and psychosocial aspects of TMD. For instance, physical therapy may be recommended to help patients improve jaw function through exercises that strengthen the muscles and improve joint mobility. Additionally, medications such as Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), muscle relaxants and sometimes antidepressants or anxiolytics may be prescribed to help manage pain and reduce muscle tension.

Psychological factors, including stress and anxiety, are also common in TMD patients. Prosthodontists may refer patients to counselors or therapists who can help manage these factors and prevent them from exacerbating the physical symptoms of TMD. Incorporating stress-reduction techniques such as mindfulness or biofeedback into the treatment plan can provide significant benefits in managing the disorder..

CONCLUSION

Prosthodontic treatment for patients with temporomandibular joint disorders is complex and requires a comprehensive, multidisciplinary approach to restore the function, comfort and aesthetics of the patient's masticatory system. From occlusal splints to full-mouth rehabilitation and dental implants, there are a variety of prosthodontic options available to address the unique needs of TMD patients. The primary goal is to minimize pain, improve jaw function and restore proper occlusion, all while maintaining the overall health and well-being of the patient. As research and technology continue to advance, prosthodontic treatments for TMD are becoming increasingly effective, offering patients long-term relief and enhanced quality of life. Through careful diagnosis, individualized treatment plans and collaboration with other healthcare professionals, prosthodontists can significantly improve the outcomes for patients suffering from TMD.