1 Introduction:

Orofacial pain comprises a heterogeneous group of pain syndromes in the facial and oral areas (including teeth), which affect the temporomandibular joint, the masticatory muscles and teeth, as well as neuropathies and neuralgias of the nerves supplying this area (N. Trigeminus). Patients with chronic orofacial pain are similar to patients with other chronic pain conditions in terms of gender differences, pain intensity, pain related psychosocial dysfunction, psychological distress and comorbid psychiatric disorders (Vonkorff et al., 1988; Dworkin et al., 2002; Suvinen et al., 2005b; Dworkin and Massoth, 1994; Aghabeigi et al., 1992; Dworkin and Massoth, 1994; Mongini et al., 2007). It is important to note that chronic pain is not only defined by time criteria (>three months) but especially by qualitative criteria, such as increasing impairment of various levels of behavior and experiences (Dworkin and Massoth, 1994; Palla, 2006). Furthermore, the impact of pain on life shows only low correlations with objective somatic findings, but is strongly correlated with psychological parameters such as anxiety, depression and somatization, respectively (Yap et al., 2002) as well as pain-related attitudes and beliefs (Turner et al., 2005; Vonkorff et al., 1988) .

Pain perception and pain experience are the result of diverse influences, which are processed in a highly complex neuronal network. From a neuroendocrinological perspective the most important input in this network comes from the stress regulation system of the HPA axis (Lariviere and Melzack, 2000).

Dysregulations of the hypothalamic-pituitary-adrenal (HPA) axis as a physiological substrate of stress have been observed in patients with chronic pain and fatigue disorders, such as chronic fatigue syndrome and fibromyalgia (Parker et al. 2001; Turner et al., 2006) whiplash-associated disorder (Gaab et al. 2005), chronic pelvic pain (Heim et al., 1998; Turner et al., 2006), low back pain (Griep et al., 1998), irritable bowel syndrome (Bohmelt et al. 2005) as well as in persons exposed to chronic or traumatic stress (Meinlschmidt and Heim, 2005; Yehuda et al., 1993). In patients with these chronic pain and fatigue symptoms as well as in traumatized

persons reduced activity and / or enhanced negative feedback sensitivity of the HPA axis was found. In other terms, for patients with these chronic somatic symptoms there is accumulating evidence of a basal hypocortisolism and an altered cortisol response to stress challenge (Parker et al., 2001; Tanriverdi et al., 2007b). To selectively assess the negative feedback sensitivity of the HPA axis on the level of the pituitary gland, the low dose (0.5 mg) dexamethasone suppression test (DST) is frequently used (Yehuda et al., 1993). Dexamethasone mainly suppresses HPA axis functioning via hypophyseal pathways since it does not readily cross the blood-brain-barrier (De Kloet, 1997).

The low dose DST has been shown to be of diagnostic value in depression, post traumatic stress disorders, chronic pain and fatigue syndromes (Gaab et al., 2003; Gaab et al., 2005; Heim et al., 2000; Hunt et al., 1991; Parker et al., 2001; Yehuda et al., 1993). However to date only a few studies investigated the role of HPA hormones in orofacial pain patients under natural and experimental conditions, finding increased daytime cortisol levels (Korszun et al., 2002) and elevated cortisol response to experimental stress (Jones et al., 1997; Yoshihara et al., 2005) compared to controls. Furthermore to our knowledge HPA dysregulations in terms of increased negative feedback sensitivity have not been examined for orofacial pain patients. The aim of the first study was therefore to perform the DST in patients with chronic myogenous facial pain, the hypothesis being that this group of patients has a dysregulation of the HPA axis compared to healthy controls. This could help to clarify the etiology of chronic myogenous facial pain.

The second part of this work is a prospective study investigating the predictive value of illness representations using the self-regulation model (SRM) of health and illness of Leventhal et al. (1980) in patients with chronic orofacial pain. The SRM is one of the most significant models on illness beliefs and perceptions, and has been studied in a wide range of medical conditions (for review see Petrie et al., 2007). The role of patients' illness beliefs, i.e. patients' individual understanding of their illness, has been identified as an important factor influencing both health seeking

behavior and treatment outcome. Several studies showed that changes in pain beliefs and coping strategies are strongly associated with treatment outcomes in pain and functioning (Jensen and Karoly, 1991; Jones et al., 2006; Turner et al,. 2000; Turner et al., 2007).

Illness perceptions significantly predicted patients' lower satisfaction with medical consultations and were strong predictors for high health care use two years later (Frostholm, 2005; Frostholm et al., 2005; Frostholm et al., 2007) or the decision to seek medical care (Sensky, 1996; Leslie et al., 2000). Reassurance by information or by medical testing is considered a central part in medical consultations but is likely to fail when not considering patients' pre-existing illness beliefs (Donkin et al., 2006; Howard and Wessely, 1996). Adjustment to chronic illness and treatment outcome is highly influenced by individual illness perceptions, for example in patients with myocardial infarction (French et al., 2005; French et al., 2006), chronic fatigue syndrome (Edwards et al., 2001), rheumatoid arthritis (Scharloo et al., 1998; Sharpe et al., 2001), low back pain (Foster et al., 2008).

To our knowledge, no study has been conducted to date that examines the predictive value of illness beliefs as measured with the SRM for outcome in patients with chronic orofacial pain.