



## EXHIBIT 2: RELATIONSHIP BETWEEN ORAL HEALTH AND BEHAVIORAL HEALTH - SELECTED EXAMPLES A

**Mental Health  
Impact on Oral  
Health**

- **Anxiety.** Teeth grinding (or bruxism) is associated with anxiety.<sup>31,32</sup>
- **Bipolar and obsessive-compulsive disorder.** Patients with bipolar disorder or obsessive-compulsive disorder can be overzealous with brushing, flossing and mouth washing.<sup>33</sup>
- **Depression.** Patients with depression have higher levels of dental caries, partly due to poor oral hygiene resulting from self-neglect and partly from dry mouth related to anti-depressants.<sup>34</sup>
- **Eating disorders.** Patients with eating disorders, in particular patients with self-induced vomiting, suffer from tooth erosion.<sup>35</sup>
- **Trauma.** Individuals with significant trauma histories may reject oral health services and/or present with habitual teeth grinding and clenching and associated periodontal, abfraction (tooth tissue loss) and occlusal wear (tooth attrition) problems.<sup>36</sup>
- **Medications for Mental Health.** Xerostomia, or dry mouth, is a common side-effect of medications used to treat mental health disorders, such as anti-depressants, anti-anxiety and anti-psychotics.<sup>37,38,39</sup>

**Oral Health  
Impact on  
Mental and  
Cognitive  
Health**

- **Cognitive functioning.** Physical inflammation from periodontitis may be a risk factor in exacerbating cognitive issues, including cognitive decline.<sup>40,41</sup>
- **Dental phobia.** A significant number of individuals experience anxiety about dental visits; some cases lead to phobia.<sup>42</sup> Dental treatment has also been identified as a trigger for memories of traumatic events.<sup>43</sup>
- **Quality of life.** Poor oral health can negatively impact an individual's employment, school and relationships.
- **Self-esteem.** Oral health issues like tooth loss and tooth decay produce significant negative effect on an individual's self-esteem and quality of life.<sup>44</sup>
- **Vital Functioning.** Poor oral health can impair functional abilities such as eating, breathing, swallowing and chewing, which can in turn impact social functioning and mental health.<sup>45,46</sup>

**Substance  
Use Disorder  
Impact on Oral  
Health**

- **Cannabis.** Use of cannabis (hashish and marijuana) can lead to increased risk of oral cancer, dry mouth and periodontitis.<sup>47</sup>
- **Cocaine.** Cocaine snorting is associated with nasal septum perforation, while crack cocaine smoking produces burns and sores on the lips, face and inside of the mouth.<sup>48,49</sup>
- **Methamphetamine.** Use of methamphetamine is associated with bruxism, excessive tooth wear, xerostomia and rampant caries.
- **Opioids.** Use of opioids is associated with tooth loss, tooth extractions and generalized decay.<sup>50</sup>
- **Medications for Substance Use Disorders.** Medications used to help treat substance use disorders (e.g., buprenorphine and methadone) can result in tooth decay/dry mouth.<sup>51</sup>

**Oral Health  
Impact on  
Substance Use  
Disorder**

- **Oral pain.** Oral pain can exacerbate factors that lead to substance use (in part to help alleviate pain) or impede substance use recovery.<sup>52</sup>
- **Opioid prescribing patterns.** Oral health providers have been among the top prescribers of opioids in recent years.<sup>53</sup>
- **Use of emergency rooms.** Individuals seeking care for oral health problems in emergency rooms are often prescribed pain medications rather than receiving complete oral care.<sup>54</sup>

- a. **Table Note:** This table provides selected examples of the relationship between oral health and behavioral health. It emphasizes direct relationships, often physiological, between selected behavioral health conditions and oral health. There are many indirect effects and social risk factors associated with behavioral health conditions that can negatively impact oral health that are not listed in the table. These can include, among other things, neglected oral hygiene, malnutrition, high-sugar diets, homelessness and sporadic dental appointment patterns.<sup>55</sup>