Oral Health and Cystic Fibrosis

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What is Cystic Fibrosis?

Cystic fibrosis is a genetic condition that affects around 1,500 people in Ireland and more than 160,000 worldwide. It's caused by mutations in the CFTR gene, which leads to an imbalance of salt and water in the body's cells. This creates thick, sticky mucus that clogs airways and affects organs including the lungs, pancreas, and liver.

Thanks to advances in care, people with CF are now living much longer - from a life expectancy of just 10 years in the 1960s to more than 50 years today. As more people with CF reach adulthood, attention is turning to long-term health issues, including oral health.

How Cystic Fibrosis Affects the Mouth

Living with CF means managing a heavy treatment burden. Daily inhalers, nebulisers, antibiotics, steroids, and high-calorie nutritional supplements can all affect the mouth and teeth. For example:

High-sugar supplements and medications increase the risk of tooth decay.

Steroid inhalers can lead to fungal infections like oral thrush.

Gastro-oesophageal reflux (GORD), common in CF, causes acid erosion of teeth.

Long-term antibiotics change the bacteria in the mouth, and may mask signs of gum disease.

On top of this, fatigue and the sheer amount of time spent on treatments (often nearly two hours per day) can make regular brushing and flossing a real challenge.

What the Research Shows

Our research in Ireland has shed light on the oral health challenges faced by people with CF:

- **Tooth decay (dental caries):** Adults with CF tend to have higher rates of tooth decay, particularly untreated decay. This is linked to enamel defects, reflux, and frequent sugar intake from diet and medication.
- **Gum health (periodontal disease)**: People with CF often have heavy plaque and calculus deposits, but don't always show the usual signs of gum disease like bleeding gums. This may be due to long-term antibiotic use.
  Importantly, plaque in the mouth can act as a reservoir for harmful bacteria that affect the lungs.

- **Enamel defects & erosion:** Enamel defects were found in about two-thirds of people with CF in our study, compared with less than a third in the general population. Reflux contributes to enamel erosion, which increases sensitivity and impacts appearance.
- **Candida (oral thrush):** Long-term steroid use increases risk, highlighting the importance of rinsing after inhaler use and keeping equipment clean.

Our study also found a clear link between calculus (tartar) build up and reduced lung function - underlining that oral health isn't just about the teeth, but about whole-body health.

Barriers to Good Oral Health

People with CF often face unique barriers to dental care:

- **Time and fatigue:** Brushing may be skipped due to exhaustion or the heavy daily treatment load.
- **Dental anxiety**: Some patients feel judged or misunderstood by dental professionals.
- **Physical challenges**: Difficulty lying flat in the dental chair or managing coughing during treatment can make appointments stressful.
- **Cross-infection concerns**: Patients worry about spittoons or dental waterlines, even though equipment is sterile.

Listening to patients' experiences is key. Small changes, such as allowing extra breaks during treatment, adjusting chair position, or taking a non-judgemental approach to diet discussions, can make a big difference.

What Can Be Done?

Improving oral health in cystic fibrosis requires action at multiple levels:

Individual level:

- Encourage practical adaptations such as upright chair positioning, extra breaks during dental treatment.
- Provide tailored advice, like rinsing after inhalers, timing oral hygiene around energy levels, and using fluoride toothpaste.
- Implementing preventative treatment regimes

Resource level:

- Develop booklets, websites, and tailored information for patients, carers, and dental teams.
- Our website oralhealthcf.ie provides resources for patients, dental professionals, carers, and researchers.

Community level:

- Work with charities and advocates to ensure oral health is included in wider CF health promotion.

System level:

- Integrate dental care into CF multidisciplinary teams, recognising its impact on overall health and even outcomes like transplant success.

Practical Tips for People with CF

- Brush twice daily with fluoride toothpaste; if fatigue is a problem, consider an electric toothbrush. It is important to keep your teeth free from plaque and tartar as bacteria from your mouth may have an impact on your lungs.
- Floss or use interdental aids daily - but if this is difficult, talk to your dental team about alternatives.
- Rinse your mouth after inhaler or nebuliser use to reduce risk of thrush.
- Keep nebulisers and spacers clean.
- If reflux is a problem, speak to your doctor - and avoid brushing immediately after acid reflux to prevent erosion.
- Be open with your dentist about challenges; a supportive dental team will adapt care to your needs.
- Discuss the use of Oral Nutritional Supplements with your dentist, who can liaise with your dietician to ensure dental and medical needs are being met

Looking Ahead

As people with cystic fibrosis live longer, oral health becomes more important than ever. Untreated dental problems can affect not only comfort and quality of life but also lung function and overall health.

The message is clear: there is no health without oral health. By working together - patients, families, dental professionals, and medical teams - we can ensure that oral health becomes a priority in cystic fibrosis care.