



Important Health Implications and Challenges of Ageing Faced by People with Down Syndrome:

Oral Health

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Everyone Deserves a
Great Smile 😊

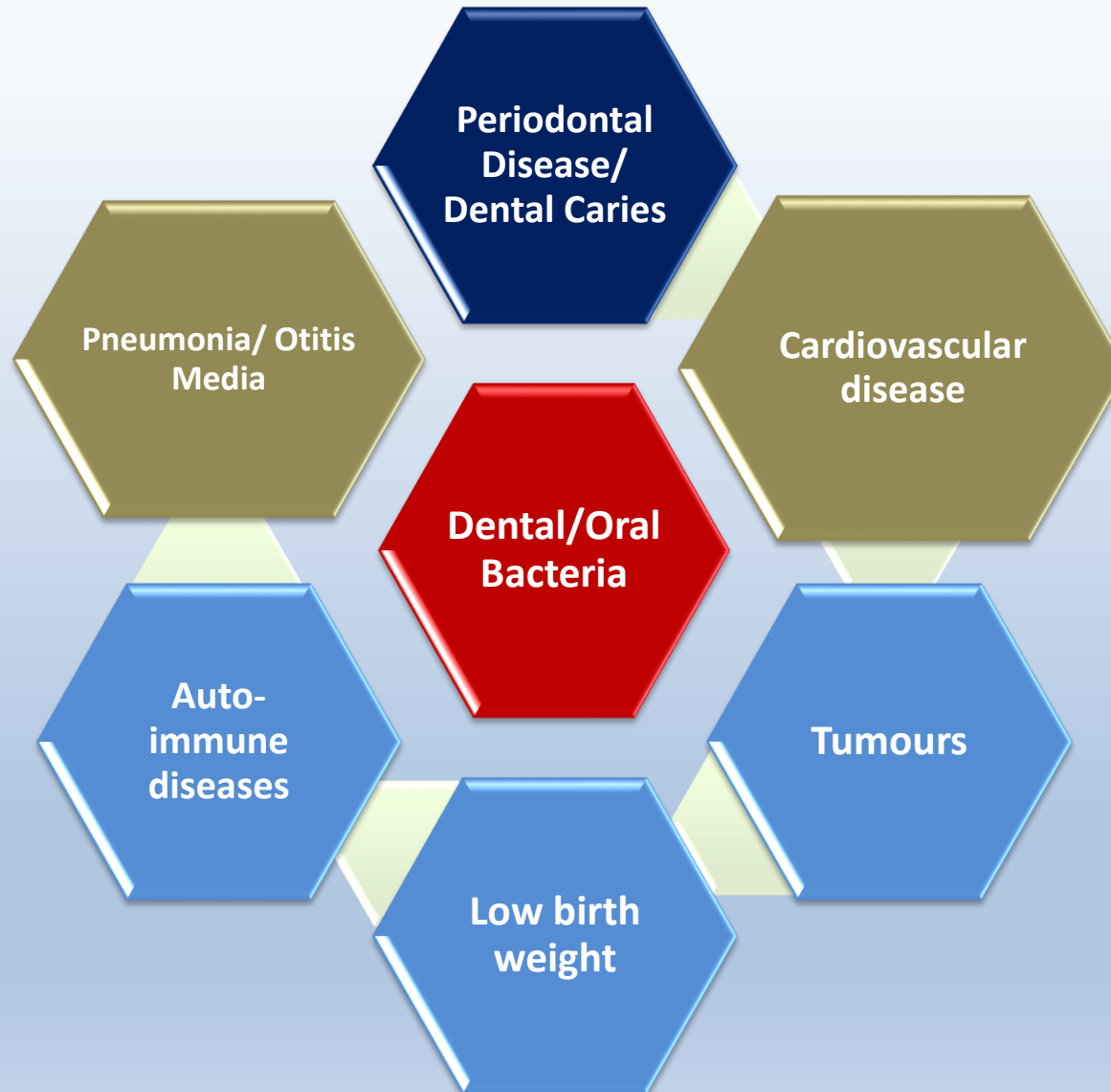
Dental Disease is
the greatest
unmet health
need of people
with Down
syndrome



Dental caries and periodontal diseases
are the most important oral health
burdens worldwide and especially for
adults with Down Syndrome

Oral disease shares common risk
factors with cardiovascular disease,
diabetes, cancer and chronic
obstructive pulmonary diseases

Links Between Oral Bacteria and Inflammation



We can eat and talk with no teeth

But

We can't eat with bad teeth

What are the Reported Dental Problems in People with Down Syndrome?

- Small teeth
- Missing teeth
- Malocclusion-
protruding lower
jaw
- Large tongues
- High incidence of
periodontal disease
- Low incidence of
decay
- Early loss of teeth

This information was often based upon:

- Earlier studies of people with Down syndrome (DS) in institutions
- Studies of children with DS

Preliminary Results of PhD Study

- *Demographics* Median age of sample = 39 years
- Filled or decayed teeth = 84.2%
- Periodontal bone loss = 73.1 %
- *Bony Pathology* = 39%
- Impacted teeth = 34.3%
- Elongated stylo-hyoid process = 52.2 %
- Calcification of superior thyroid process 51.3 %
- Indication of osteoporosis = 17.4%

What is Dental Disease?

Can it be Prevented?

Limit your snacks

Each time you eat foods containing sugar you feed the bacteria in your mouth that cause tooth decay.



Brush twice a day

The best protection against tooth decay and gum disease.



Visit your dentist

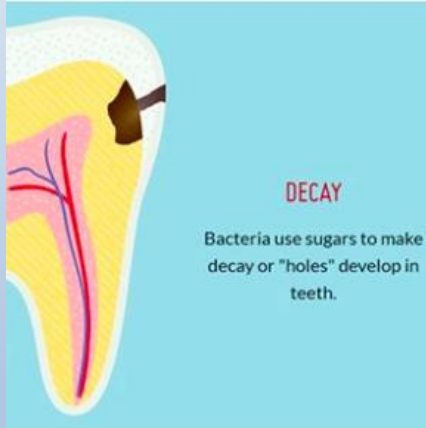
Regular check ups do more than just check for tooth decay, they also check for oral cancer and gum disease.



- Decayed teeth (caries)
- Periodontal (gum) diseases
- Trauma- tooth or jaw
- Pathology affecting bone
- Sinus ↔ toothache
- TMJ joint disorder
- Cancer of mouth

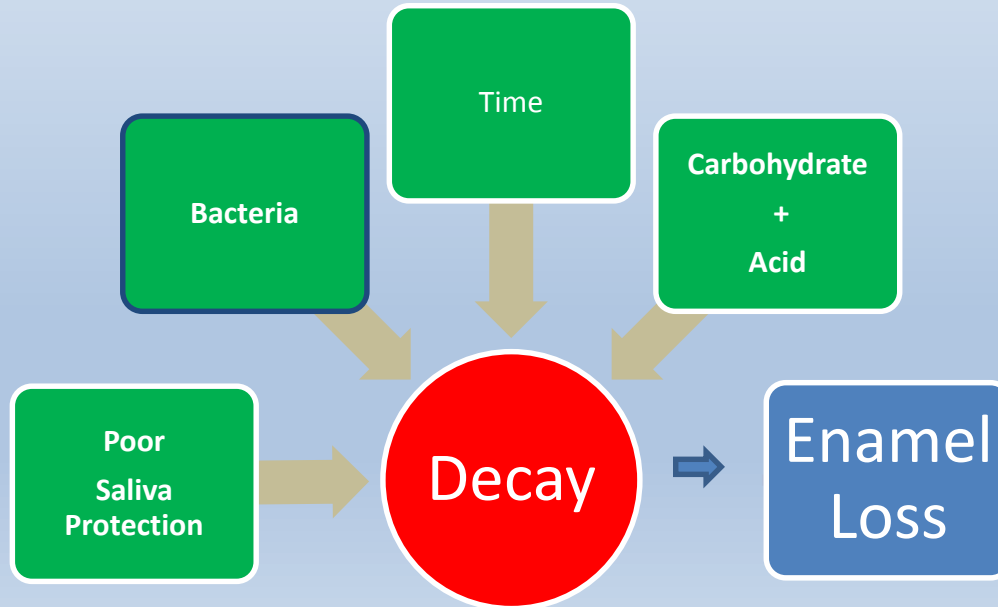
Two Main Types of Dental Diseases

1. Tooth Decay (Caries) affects the teeth
2. Periodontal Disease affects the gums and bone around the teeth



Decay of the Teeth

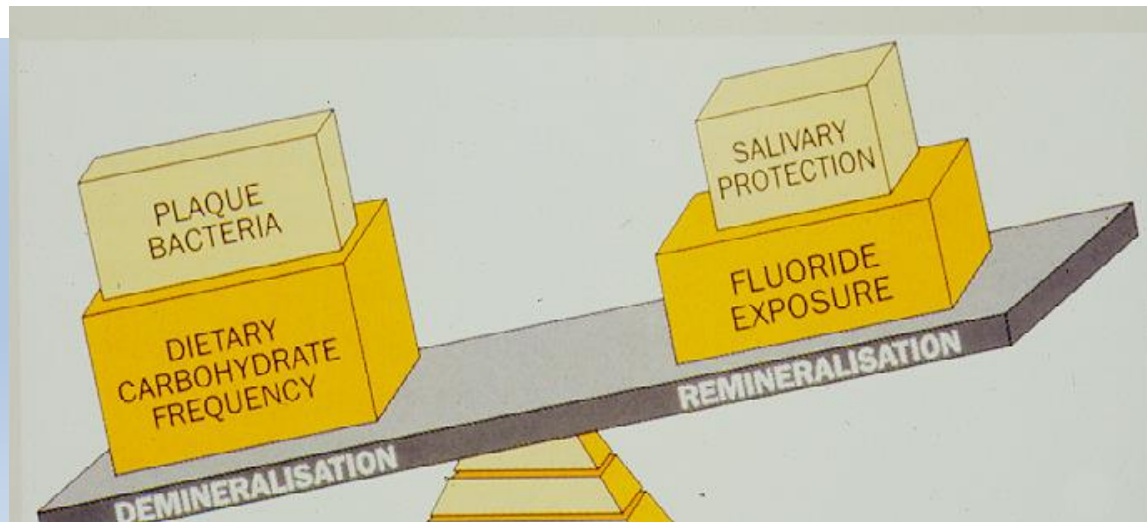
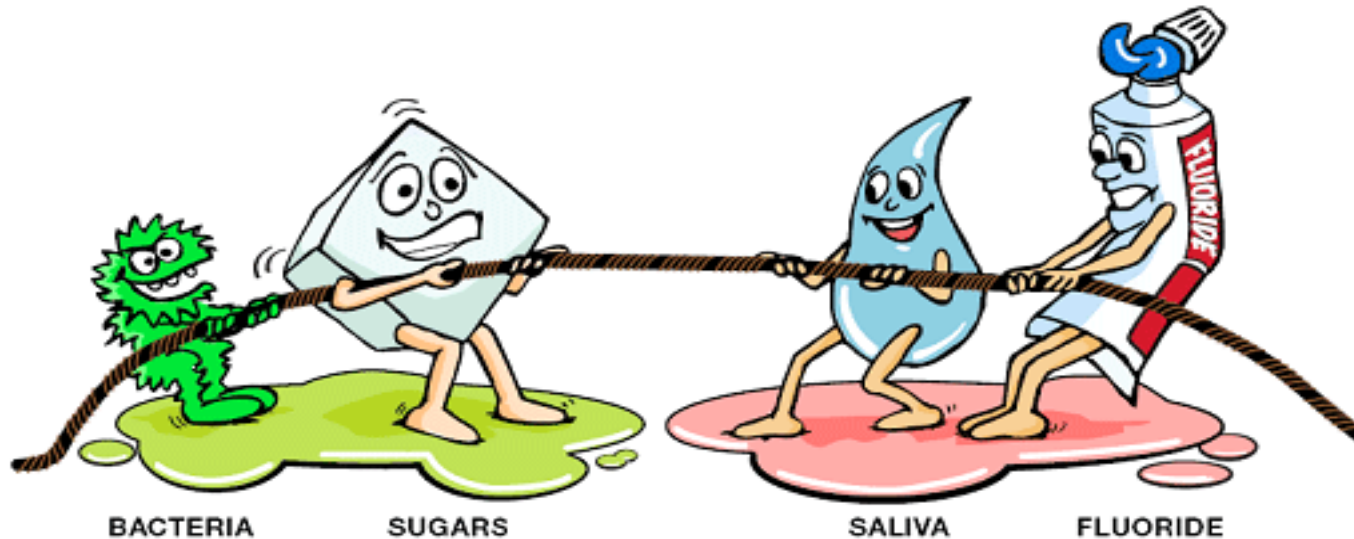
- A dental cavity (decay/caries)= hole in a tooth.
- Did you know that a cavity is the result of the tooth enamel dissolving over time?
- Early prevention can reverse caries!



The Balance between Health & Decay

Early decay has no pain

Any Form of Sugar Causes Decay



Panoramic Radiographs Show Hidden Problems of Teeth, Jaws, Sinuses, Neck

Antibiotics may stop pain of infection but infection is still in the bone

Periodontal Disease (Gum Disease)

Gingivitis +/- Periodontitis

Gingivitis is reversible:

Red & Swollen Gums

Gums Bleed on Brushing

No signs on x-rays. NO pain



- **Cause:** Plaque (food+ bacteria) around the gum line starts the inflammatory process
- May be on one or several teeth
- **Gingivitis can be fixed by brushing and flossing.**

Toothbrushing needs the same
manual dexterity as handwriting

*People with Down syndrome need
technology*



Periodontitis (Stage Two)

- Develops more quickly in people with Down syndrome due to an altered immune reaction to plaque
- Bacteria invade below the gums to cause inflammation then bone loss around tooth root
- Bad breath, teeth can get loose or move
- X-rays show bone loss: on one or more teeth
- Pain on biting
- No Pain only in late stage of disease
- **Needs Dental Treatment**



Trauma

- Falls can cause dental trauma
- Any tooth that has been chipped, moved or discoloured needs immediate treatment and long term follow up
- Teeth knocked out can be put in again
- Dead teeth don't hurt but can be infected
- Falls on the chin with problems opening the mouth may be a fracture to the jaw

Temporomandibular joint and muscle disorders (TMJ)

- TMJ pain can trigger migraine headaches

Causes and Symptoms

- Trauma to the jaw or TM joint
- Grinding teeth /Stress

Symptoms :

- Pain or stiffness in the chewing muscles [often one-sided]
- Limited movement or locking of the jaw
- Painful clicking, popping or grating in the jaw on opening
- “TMJ” conditions appear to be more common in women.
- Prevalence in People with Down syndrome is unknown.

Treatment of TMJ

- For most people, discomfort from TMJ disorders will eventually go away with little or no treatment.
- Simple steps to help ease symptoms temporarily:
Eat small pieces of food, apply ice packs then heat packs. Avoid extreme jaw movements like wide yawning and gum chewing.
- Short term use of Nurofen to reduce inflammation
- Simple breathing techniques to reduce stress may also provide relief.

Oral Cancer

- Non- painful in early stages
- Ulcers that do not heal
- Survival rate is >60% when diagnosed by a dentist
- GP diagnosis survival rate is < 40%





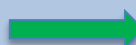
People with Down Syndrome

- ❖ People with Down syndrome often don't complain of pain

However

- ❖ Behaviour might change with severe pain
- ❖ Dental pain usually = severe problems
- ❖ Make sure oral care is in any Care Plan

What tooth aches needs treatment?

1. Sensitive to sweets or cold  Seek dental care
Treatment : a filling or sealant.
2. Throbbing pain, worse with hot or cold. May progress to a **swelling** and pain eases.  Needs immediate dental treatment: tooth extraction or root canal treatment (RCT). Antibiotics often required but will not cure the infection in the bone.
3. Intermittent pain often in different teeth, worse if patient bends over  May be sinusitis. Use sinus irrigation and probiotics

Atlanto-Axial Instability(AAI)

- AAI is the excessive movement at the junction between the atlas (C1) and the axis (C2) >10mm anterior displacement (normal<5 mm in children)
- Occurs in about 10%-20% of people with Down Syndrome
- Only 1% have symptomatic A A Subluxation
- Laxity of Transverse Ligament & Dens Deformity
- **Symptomatic AAS is life threatening**

Non-Traumatic Atlantoaxial Subluxation

Important Symptoms of AAI Subluxation

- ▶ Inability to turn head laterally
 - ▶ Pain at base of skull
 - ▶ Change of gait
 - ▶ Tired, supporting head with hands
 - ▶ Loss of first bladder/bowel control
 - ▶ Tightness in the muscles
-
- ▶ Please LISTEN to Mothers



**It took 5 specialists & 4 weeks
before a Correct diagnosis was made!**

A. Scott 1990

A. Scott

Seek Professional Dental Care When there is:

- Any swelling of mouth, face or neck
- Any Ulcer that does not heal
- Any persistent burning of the mouth
- Any severe pain in the teeth- even if it stops

For patients who can not explain watch out for :

- Change in eating habits
- Change in Oral behaviour
- Bad breath

Before Coming for Treatment

- Talk about what is going to happen
- Use books to illustrate procedures
- Keep the language positive
- Try to have a first visit as an introduction- no serious treatment
- A beautiful smile is very important for everyone

Happy Healthy People

Prevention is Essential

1. Good dental health & oral hygiene
2. Healthy diet: Low in sugars & processed foods
3. Drink tap water
4. Exercise

Resources

- <https://www.ada.org.au/Your-Dental-Health/Older-Adults-65>
- <https://www.nidcr.nih.gov/health-info/childrens-oral-health/tooth-decay-process>
- [https://www.who.int/oral health/disease burden/global/en/](https://www.who.int/oral_health/disease_burden/global/en/)
- [https://www.aci.health.nsw.gov.au/ data/assets/pdf file/0016/231514/Health Care in People with Intellectual Disability Guidelines.pdf](https://www.aci.health.nsw.gov.au/data/assets/pdf_file/0016/231514/Health_Care_in_People_with_Intellectual_Disability_Guidelines.pdf)

The International Association for the Scientific Study of Intellectual Disability (IASSID) has made Recommendations for the detection and management of these conditions in people with intellectual disability

- Dental health
- Nutrition
- Epilepsy
- Mental health
- Osteoporosis
- Immunisation status
- Comprehensive health assessments
- Women's Health
- Sensory impairments
- Constipation
- Thyroid disease (+check for Hashimoto disease)
- Gastro-oesophageal reflux disease and H.pylori
- Medication review
- Physical activity and exercise
- Genetics