



Dental Nurse Network

Professional growth for dental nurses

Fluoride Varnish Application

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Aims: Week 6

By the end of this webinar you should:

- 1) Be able to outline the concerns that patients may have regarding systemic and topical fluoride
- 2) Have an understanding of the clinical evidence AGAINST the use of fluoride.
- 3) Be confident in how to handle a situation where a patient has refused consent



Patient Care and Communication

Patient Care and Communication

GDC Standards for the Dental Team

Put patients interests first:

- 1.2 – You must treat every patient with dignity and respect at all times.

Communicate effectively with patients:

- 2.1- You must communicate effectively with patients, listen to them, give them time to consider information and take their individual views and communication into account.



Patient Care and Communication

Respect:

“Feeling of admiration or deference toward a person, group, ideal, or indeed almost any entity or concept, as well as specific actions and conduct representative of that esteem”

Dignity:

“The state or quality of being worthy of honour or respect”

- 1.4: Take a holistic and preventative approach to patient care which is appropriate to the individual patient.



Patient Care and Communication

Good Communication:

Good communication means clear, unambiguous two way constructive exchange.

Requires :

- Accepting people
- Being non-judgemental
- Encouraging positive not negative feelings
- Working as a partnership



Patient Care and Communication

Benefits:

- Create opportunity for patient to ask questions and increase knowledge and understanding of health issues
- Ensure patient comfortable during appointments
- Reassure patient if have any concerns
- Gives us a chance to explain procedures, help patient have information to make informed decisions / give informed consent



Patient Care and Communication



Picture 1



Picture 2



Picture 3



Picture 4



Patient Care and Communication

Barriers to Good Communication:

- Social and Cultural Gaps
- Limited Receptiveness
- Negative Attitudes
- Limited Understanding
- Insufficient Emphasis
- Contradictory Messages



Fluoride Concerns



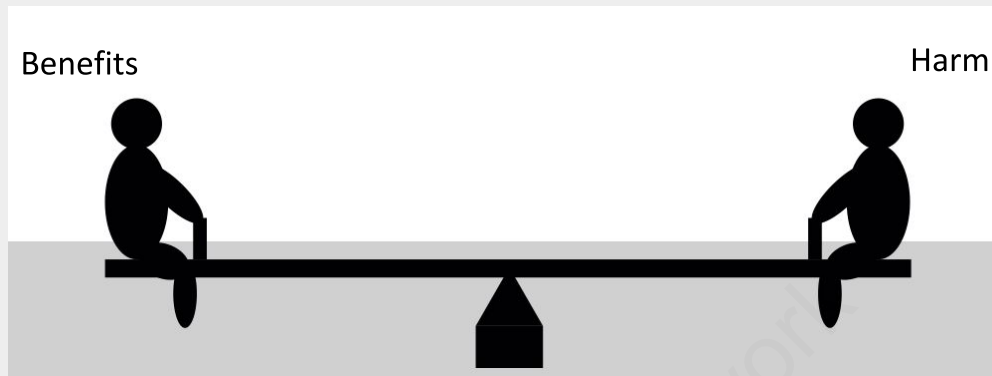
Fluoride Concerns

“The Dose Makes The Poison”

A substance can produce the harmful effect associated with its toxic properties only if it reaches a susceptible biological system within the body in a high enough concentration.



Fluoride Concerns



Fluoride Concerns: Topical Fluoride?

Topical vs. Systemic Effects

“it would be more advisable to increase plaque fluoride concentration directly by topical application.”
(Hellwig & Lemmon 2004)



Fluoride Concerns: Systemic Fluoride

- Dental Fluorosis
(causes markings on enamel 'enamel defects')
- Mild acute fluoride overdose
(vomiting, stomach pain, nausea)
- Severe acute fluoride overdose
(can lead to systemic conditions and can result in death)



Fluoride Concerns: Systemic Fluoride

Changes to other tissues we cannot see?



Fluoride Concerns: Systemic Fluoride

Biochemical Mechanisms:

"A chemical mechanism involved in vital processes occurring in living organisms."

Dental Fluorosis may be an indicator of wider systemic damage.
(Groth 1973; Colquhoun 1997).



Fluoride Concerns: Systemic Fluoride

Skeletal fluorosis:

"A bone disease caused by excessive accumulation of fluoride in the bones."

Healthy adult kidneys excrete 50 to 60% of the fluoride ingested each day
(Marier & Rose 1971)

The fluoride concentration in bone steadily increases over a lifetime
(National Research Centre 2006)



Fluoride Concerns: Systemic Fluoride



Man with skeletal fluorosis in Turkana, Kenya.
Photo: protectorsystems.com



Fluoride Concerns: Systemic Fluoride

Fluoride and the Brain?

“Apparent that Fluorides have the ability to interfere with the functions of the brain”
(National Research Council 2006)

Fluoride accumulates in the brain, alters mental behaviour in a manner consistent with a neurotoxic agent
(Mullenix 1995)

One animal study found effects on brain at low doses
(Varner 1998)



Fluoride Concerns: Systemic Fluoride

Fluoride and IQ?

Study	Fluoride Level found to possibly effect IQ
Xu (1994)	1.8-3.9ppm
Yao (1996)	2.0ppm
Lu (2000)	3.15ppm
Eswar (2011)	2.45ppm
Ding (2011)	0.3-3.0ppm
Choi (2012)	1ppm



Fluoride Concerns: Systemic Fluoride

‘Exposure to Fluoridated water and attention deficit hyperactivity disorder prevalence among children and adolescents in the United States: an ecological association’
(Malin, Till, 2015)

Conclusion:

“Parents reported higher rates of medically-diagnosed ADHD in their children in states in which a greater proportion of people receive fluoridated water from public water supplies.”

<http://ehjournal.biomedcentral.com/articles/10.1186/s12940-015-0003-1>



Fluoride Concerns: Systemic Fluoride

Fluoride and the Thyroid?

“The thyroid function of hyperthyroid patients was effectively reduced at just 2.3 to 4.5 mg/day of fluoride ion”
(Galletti, Jovet 1958)

“Lowering Thyroid Function in otherwise healthy individuals at 2.3ppm fluoride in water”
(Bachinskii 1985)



Fluoride Concerns: Systemic Fluoride

Ethical?

- Informed Consent
- The dose cannot be controlled
- Subsets of population more vulnerable to fluorides toxicity
- No ‘Safe Margin’
- People now receive fluoride from many other sources besides water.



Refusal of Consent: Topical Fluoride

- Respect patient's views
- Explain risk of not using topical fluoride to patient
- Ensure patient aware of difference between topical and systemic fluoride
- Record in notes
- Emphasise to patient that they can change their mind in the future!!



Refusal of Consent: Topical Fluoride

Alternatives to Fluoride?

- No real alternatives at present
- Focus on Diet and Oral Hygiene Advice



Summary

- Need to ensure good communication with patients
- Ensure we respect patients views and beliefs at all times
- Looked at barriers against good communication
- Looked at evidence against systemic fluoride use particularly water-fluoridation
- Looked at ethical issues related to water-fluoridation
- Looked at how to deal with refusal to consent for fluoride application



END OF WEEK 6

- Week 1-6 webinars and quiz questions
- ROE
- Send ROE for marking before the course expires.

