Let me introduce ourselves…

Centre for Learning Sciences and Technologies

CELSYTE

• Centre of Excellence in the fields of Learning Sciences and Technology Enhanced Learning.

• CELSTECE aims to improve learning and knowledge handling at work, at school, at home and on the move, by combining state-of-the-art knowledge in the Learning Sciences with the innovative powers of new Information and Communication Technologies.

• Core activities of CELSTECE are: research, innovation and education & training.

CELSYTE Programmes and Functions

Three programmes
1. Learning & Cognition
   - Topics: Expertise development
   - Effective learning strategies
   - Internet as a learning resource
   - Brain, lifestyle, and learning
2. Learning Networks
3. Learning Media

Let me introduce ourselves…

CELSYTE Programmes and Functions

Prof. Paul Kirschner
Programme leader

Dr. Renate de Groot
Topic leader

Dr. Halszka Jarodzka
ET specialist

• Cognitive, pedagogical & health psychology
• Main research question: How do psychobiological determinants influence learning and cognition in lifelong perspective?
Agenda

• Results study fish consumption and academic achievement
• Eye tracking, what is it and how does it work?
• New study proposal
• Discussion

Thus…….

• Omega-3 LCPUFA might contribute to cognitive performance/development
• Prefrontal cortex matures until after the twenties
• DHA intake has been associated with changes in functional activity of the prefrontal cortex
• Lack of attention for healthy adolescents

Limitations previous work

• Limited age range
• Limited to boys
• No combination of cognitive performance, academic achievement, and self-report
• Limited fish consumption range

Research question

• What is the association between DHA/EPA intake through fish consumption on the one hand and academic performance, objective and subjective cognitive performance in healthy adolescents aged 12 to 18 years on the other hand?

Methods

• Observational study
• Adolescents in grade 7-12 of higher secondary education or pre-university education
• Healthy
• Measures: - Fish consumption questionnaire
  - Amsterdam Vocabulary Test
  - Youth Self-Report
  - Academic performance (Dutch, English, Mathematics)
• Covariates: - Sex
  - Age
  - Level of parental education
• ANCOVA with polynomial contrast analyses
Conclusions

• Higher fish consumption is associated with better vocabulary scores and shows a trend for significance with better academic achievement.

However
As soon as the advised norm of 450 mg EPA/DHA per day has been exceeded, fish consumption was associated with lower academic achievement and lower vocabulary scores.

Thus
It seems prudent to advice adolescents to consume fish twice a week but not more than that!

Eye-Tracking – An Introduction

We have been thinking…..

Recording room: @ OU

Types of eye movements

Fixations
– The eye is still, information can be received (perceptual intake)
– Occurrence: for all types of stimuli

Saccades
– Rapid eye movements without information reception
– Occurrence: for all types of stimuli

Smooth pursuit
– Eye follows a moving object (bird in the sky), information can be received
– Occurrence: for dynamic stimuli only

Blinks
– Occurrence depends on: tiredness, wearing contact lenses, …
Bedankt voor jullie aandacht!

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Onderwijs- en Leerwetenschappen
Topic brein, leefstijl en leren

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