

Work package title: *WP2, Task 2: Identification of parameters and biomarkers for diagnosis and early identification of ASDs*

Presentation title: *Systematic review of biomarkers and non-social signals*

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Update on activities:

Context

- Task 2 of WP2 aims to identify more reliable and more accurate predictors of an early ASD diagnosis

Progress

- Two systematic reviews have been conducted: one on biomarkers and one on non-social behavioural features
- For the biomarker review we focused on children between 0 and 8 years old. 3740 articles have been reviewed. After further screening and full text review, 132 studies were fully analyzed.
- For the review of non-social behavioural features we focused on progressive longitudinal studies with siblings with an older brother or sister with ASD. 3376 studies have been reviewed. After further screening and full text review, 26 studies were fully analyzed.
- Based on the findings, a series of questions have been developed which will be included in a survey for professionals.

Initial findings

- Biomarkers: the most promising biomarkers are:
 - Brain structure: larger total brain volume – larger amygdala and structural differences in corpus callosum
 - Brain function: deviant brain activity to speech
 - Brain electrophysiology: differences in connectivity
 - Immune function deficiency as indicated by cytokine and antibody levels
 - Neonatal jaundice and asphyxia
- Non-social behavioural features: most promising:
 - motor functioning
 - repetitive/stereotyped behaviour

Key learning:

What worked well:

- notwithstanding the large number of articles that had to be screened and reviewed, selection was realized with a high interrater reliability

Next steps:

- Finalize on-line survey questions and distribute to sites for translation into local languages. November 2016
- Launch of survey. December 2016
- Monitor survey responses. January 2017
- Analysis of survey responses. March 2017
- Interviews with stakeholders. April 2017
- Final report preparation. May 2017

The final recommendations will be presented to the European commission and the national decision-makers during the final workshop (October 2017).