



**QENDRA KOMBETARE E MIRERRITJES
ZHYLLIMIT DHE REHABILITIMIT
TE FEMIJEVE**

Efficacy of a specific polyunsaturated fatty acids (PUFA) combination in the multimodal management of children with autism spectrum disorders



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Introduction

The «Center of Developmental and Pediatric Neurorehabilitation» (C.D.N) in Biel, Switzerland, and the NCWDRCH cooperate very closely since July 2005, especially emphasizing the **complementary medical approach** of the **multimodal management** of children with autism spectrum disorders (see abstract for the EACD 2011). The complementary approach is a valuable alternative because many Albanian patients have no access to medications (e.g. risperidone, methylphenidate). Even if available these medications often cause unacceptable adverse effects.

Background

ADHD, dyslexia, dyspraxia (**Richardson 2004**) and autism spectrum disorders (ASD) (**Bell 2004**) are among other connected to fatty acid deficiencies and imbalances. Vancassel et al (2001) described lowered ω -3 fatty acid levels in plasma and in erythrocytic membrane phospholipids in children with ASD compared with healthy children. Several studies stated that the formulation of **Equazen™ eye q**, based on the specific combination of the long-chain ω -3 fatty acids eicosapentaenoic (EPA) and docosahexaenoic acid (DHA) and ω -6 fatty acid (γ -linolenic acid, GLA) with a ratio of 9:3:1, significantly improved the behaviour symptoms of children with ADHD and developmental coordination disorder (**Richardson AJ, Montgomery P, 2005**). In 2007 Amminger et al published data from a small randomised, double-blind and placebo-controlled study, in which 13 autistic children aged between 5–17 years were treated over a period of 6 weeks with ω -3 fatty acids (1.5g/day). A significant improvement of hyperactivity and stereotypical behaviour was seen.

Results

All patients showed different benefits of the treatment. Most of the parents reported not only a remarkable **improvement of general health** (e.g. less respiratory infections), but especially often a **remarkable improvement of the social behaviour** (e.g. less aggression, less irritability), **hyperactivity, distractibility and impulsivity**. The multidisciplinary group documented these improvements by standardized interviews and the mentioned checklist. 15 patients had a significant **sleep quality improvement**, 17 patients a significant **increased concentration**. There were no remarkable improvements in speech. The intake of Equazen™ eye q was well tolerated. Most of the children preferred Equazen™ eye q liquid. **No side effects were observed.**

Conclusion

Equazen™ eye q seems to be a **safe and effective adjunctive treatment** for children with autism spectrum disorder following a standard pharmaceutical treatment (e. g. risperidone). Especially if parents don't accept medication (e.g. risperidone), or if medication is not available or unacceptable side effects occur, the supply of Equazen™ eye q could contribute to a **noticeable improvement in the quality of life of children with ASD.**

Objectives

The aim of our open-label therapeutic essay was to validate these results in a clinical setting in the NCWDRCH and the C.D.N using Equazen™ eye q. How is the acceptance of Equazen™ eye q (capsules, chews, liquid)? Are there any side effects?

Equazen™ eye q

Ingredient	Equazen™ eye q 6 Capsules/chews	Equazen™ eye q liquid (15ml)
Fish oil (source of ω -3)	2400 mg	2400 mg
– eicosapentaenoic acid (EPA)	558 mg	558 mg
– docosahexaenoic acid (DHA)	174 mg	174 mg
Evening Promrose Oil (source of ω -6)	600 mg	600 mg
– γ -linolenic acid (GLA)	60 mg	60 mg
Natural vitamine E	11 mg	6 mg



Methods

Since 2008 a total of 18 boys and 9 girls, aged between 3-10 years with autism spectrum disorder have been treated for at least 6 months with Equazen™ eye q (2-6 capsules /chews or 5-15ml liquid/per day). All patients continue this dietary supplementation after the open-label therapeutic essay as a part of the multimodal treatment. In the first 6 months all other therapies (e. g. occupational therapy, special education, medication (6 of 11 patients of the C.D.N. with risperidone) were kept unchanged. At the beginning and every 3rd month the multidisciplinary group (paediatrician, psychologist, special educator) and the parents measured the children's behaviour using the autism behaviour checklist (from Krug, Arick and Almond), rating scales for hyperactivity and stereotypical behaviour (Aberrant Behaviour Checklist, ABC).

References

- Amminger GP, Berger GE, Schafer MR et al (2007) Omega-3 fatty acids supplementation in children with autism: a double blind randomized, placebo-controlled pilot Study. *Biol Psychiatry* 61 (4) : 551–553
- Bell JG, Mac Kinlay EE, Dick JR et al (2004) Essential fatty acids and phospholipase A2 in autistic spectrum disorders. *Prostaglandins Leukot Essent Fatty Acids* 71 (4) : 201–204
- Posey DJ, Mc Dougle CJ (2001) Pharmacotherapeutic management of autism. *Expert Opin Pharmacother* 2 (4): 587–600
- Richardson AJ (2004) Long-chain polyunsaturated fatty acids in childhood developmental and psychiatric disorders. *Lipids* 39 (12) : 1215–1222
- Richardson AJ, Montgomery P (2005) The Oxford-Durham study: a randomized, controlled trial of dietary supplementation with fatty acids in children with developmental coordination disorder. *Pediatrics* 115 (5): 1360–1366
- Vancassel S, Durand G, Barthelemy C et al (2001) Plasma fatty acid levels in autistic children. *Prostaglandins Leukot Essent Fatty Acids* 65 (1): 1–7