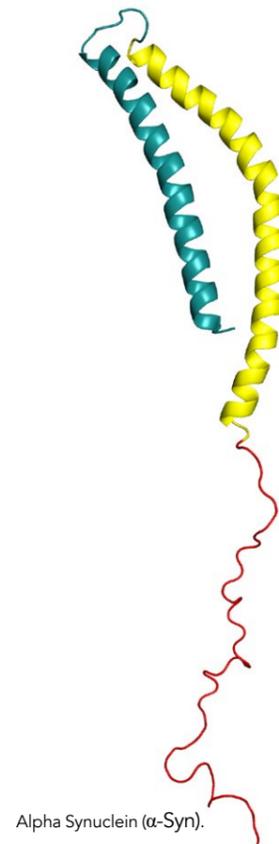


NICHI GLOW ORAL CONSUMPTION BY CHILDREN WITH ASD: A PILOT STUDY

Abraham and Raghavan conducted a pilot study investigating the effects of Nichi GLOW on gut microbiota, plasma α Syn, behaviour (assessed using the Childhood Autism Rating Scale (CARS)), sleep pattern (assessed using a Children's Sleep Habits Questionnaire (CSHQ)) and serum melatonin in children with ASD.

A control group received conventional therapy whereas the treatment group received Nichi GLOW in addition to conventional therapy for 90 days. Analysis of gut microbiota found a shift towards more favourable gut microbiota and decreased abundance of bacteria which secrete curli (Enterobacteria and *E.Coli*) in the treatment group.

The study also examined CARS scores and α -Syn plasma levels in both groups with these results published in *BMJ Neurology Open*. Significantly decreased CARS scores were noted in the treatment group (on average, a



compared to the control group. The researchers postulate possible mechanisms for the increased plasma α Syn. Firstly, higher plasma α Syn levels could be due to Nichi GLOW preventing neural synapse α Syn build up and natural killer cells scavenging amyloid deposits, raising plasma levels. The other proposed mechanism is that Nichi GLOW actively reduces the gut bacteria responsible for α Syn misfolding and aggregation.

More research is needed to fully elucidate these proposed mechanisms and ascertain whether clinically meaningful changes in CARS and α Syn levels can be achieved with Nichi GLOW treatment in children with ASD. In addition, further research in neurodegenerative diseases is required to ascertain the potential of Nichi GLOW as a prophylaxis for neurodegenerative disorders such as AD and PD (diseases marked by α Syn abnormalities and amyloid build up).

With findings of improved melatonin levels in animal studies following treatment with Beta Glucans, serum melatonin levels and sleep patterns were investigated in this pilot study. Analysis revealed significantly reduced CSHQ scores, indicating improved sleep patterns in the treatment group following supplementation with Nichi GLOW, whereas no significant improvements were noted in the control group.

Furthermore, serum melatonin levels increased more in the treatment group compared to the controls. With sleep difficulties affecting the functioning and daily life of these children and their family, effective sleep treatments are essential in the management of ASD. This is one of the first studies showing that a non-pharmacological intervention can improve sleep patterns and sleep quality in children with ASD.

The researchers suggest future studies should also explore the effects of Nichi GLOW on other symptoms of ASD. Before Nichi GLOW can be recommended as a food supplement in children with ASD, larger multicentre studies with follow-ups are required to confirm these findings. This study does, however, provide early novel insights into the potential utility of Nichi GLOW in ASD.

This is one of the first studies showing a non-pharmacological intervention improves sleep patterns and sleep quality in children with ASD.

three-point improvement in CARS scores) compared to controls, which indicates an improvement in behavioural patterns of these subjects. The team suggest such an improvement in behavioural patterns

may be due to improved sleep following consumption of Nichi GLOW.

Regarding plasma α Syn levels, these increased in the treatment group



Behind the Research



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Research Objectives

Indian and Japanese joint study on the effects of Nichi GLOW on children with ASD, with emphasis on the gut microbiome.

References

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Bio

Samuel JK Abraham, a clinician and scientist, is involved in an array of interdisciplinary research on biomaterial-based tissue engineering to develop cell-based therapies in regenerative medicine, immune modulation through gut microbiome & NK cells based anti-cancer solutions, and in vitro cellular senescence, micro-gravity-based enhancement of cellular function.

Funding

The Government of Japan & the Prefectural Government of Yamanashi sanctioned a special loan for this study and M/s Yamanashi Chuo Bank processed the transactions.

Collaborators

- Dr K Raghavan, co-founder & consultant paediatric neurologist, JAICARE Hospital, Madurai, India
- Mr Takashi Onaka, founder & chairman, Sophy Inc, Kochi, Japan

Personal Response

What other neurodevelopmental and neurodegenerative disease do you think could benefit from studies investigating the effects of Nichi Glucan and why?

While the gut microbiome-based beneficial effects of AFO-202 strain of black yeast *Aureobasidium Pullulans* has yielded encouraging outcomes in this clinical study, another novel strain of N-163 produced Beta glucans have yielded significant immune modulation in pre-clinical (Ikewaki N, Raghavan K, Dedeepiya V, et al, 2021) and clinical studies in healthy volunteers (Ikewaki N, Sonoda T, Kurosawa G, Iwasaki M, et al, 2021) and also in patients with Duchenne Muscular Dystrophy (Raghavan K, Dedeepiya VD, Srinivasan S, Pushkala S, et al, 2021). We are proposing to undertake studies in neuroinflammatory conditions such as multiple sclerosis with the N-163 strain product, which also has a safety track record as a food supplement; it is orally consumable and has no allergens.