

Anti-fungals and Probiotics

Rationale: The human gut contains a large number of bacteria (10x more gut bacteria than cells in the entire body). Most of these gut bacteria are beneficial, and help with food digestion, water balance, and limiting the growth of harmful bacteria and yeast.

Some children with autism have low levels of beneficial bacterial, and high levels of harmful bacteria and yeast. The harmful bacteria and yeast produce toxins that can severely affect mental functioning and behavior; alcohol is just one of many toxins that yeast can produce, and is a good example of a yeast toxin that can severely affect behavior. It seems that the best way to treat these problems is with a combination of antifungal diet, antifungal medications (if yeast are present) and probiotics (beneficial bacteria). These can help restore normal gut function.

Treatment:

Anti-fungal Diet: Yeast feed on sugar and simple carbohydrates, so reducing or avoiding those foods is important. Also, it can be helpful to avoid foods containing yeast or yeast products, including fruit juice, vinegar (in ketchup and other foods), leavened foods (bread, pizza, bagels, rolls), cheese, and mushrooms (a type of yeast/fungus).

Duration: Dr. Sidney Baker recommends a trial for 5-14 days, followed by a high exposure to see if the diet makes a difference. If so, continue long-term.

Anti-fungal Medications: There are several prescription and non-prescription anti-fungal treatments, and sometimes several need to be tried before finding an effective one for a given strain of yeast. Nystatin is the safest because it is not absorbed, but many yeast are now resistant to it. Diflucan, Sporanox, Lamisil, and Nizoral are alternatives which yeast are less likely to be resistant to, but they are absorbed into the body and have a very small chance of overtaxing the liver, so liver enzymes should be checked every few months if they are used long-term. Some non-prescription antifungal treatments include caprylic acid, oregano concentrate, citrus seed extract, undecylenic acid, and pau d'arco. An unusual treatment is *saccharomyces boulardii*, a harmless yeast that will kill off other yeast and promote beneficial bacteria, but will disappear within a few weeks when you stop taking it, often leaving behind a now healthy gut.

Duration: Dr. Sidney Baker recommends a series of high-dose trials of 2-3 weeks for each antifungal, followed by the next one until you find one that works.

Die-off reaction: When yeast are killed, they can release all their toxins at once. This can cause a temporary “die-off” reaction lasting a few days, followed by good improvement when the toxins leave the body.

Probiotics: Probiotics are mixtures of one or more beneficial bacteria which are normally present in the gut. Many probiotics contain only a few billion or less Colony Forming Units (CFU’s), but some strong probiotics contain 30-75 billion CFU’s, and some prescription probiotics contain up to 500 billion CFU’s. The higher-dose products are more likely to be able to reach the gut and recolonize it with good bacteria. If high-dose probiotics continue to be needed, this may suggest pancreatitis or other serious dysfunction may be present.

Duration: Use a high dose initially, and then consider a lower maintenance dose.

Testing: One simple and very useful test is to look at the stool, since half of the stool is bacteria. The stool should be a medium/dark brown and well-formed, with 1-3 bowel movements/day.

Use Antibiotics only with great caution: One round of oral antibiotics typically kills off over 99% of beneficial gut bacteria, but has little or no effect on yeast or many types of bad bacteria, which then thrive due to lack of competition from beneficial bacteria. Oral antibiotics often cause overgrowths of bad bacteria and yeast, and are suspected as the cause of many of the gut problems in autism. Several studies have shown that children with autism had, on average, a much higher usage of oral antibiotics than typical children in their first few years of life.

Lab Testing: A Comprehensive Digestive Stool Analysis (available from Great Smokies or Doctor’s Data) will reveal the amount of some types of normal and abnormal bacteria and yeast. A sensitivity analysis can suggest which anti-fungals are most likely to be beneficial, but often just a series of trials of different antifungals is the best approach.

Urinary organic acid testing can be done to check for abnormally high levels of metabolites from yeast, although the reliability of this test is somewhat unclear.