

# Ken Lassesen on Changing the Gut Ecosystem With Probiotics

## Changing the Gut Flora II

*(Recovered ME/CFS patient Ken Lassesen relates his understanding of probiotics and gut bacteria. He is not a doctor. Please consult with your doctor before making any changes in your diet or supplement regimen.)*

Changing your gut flora is actually not easy. Think of a healthy gut as a well-balanced ecosystem whose flora supports your health. Now think of an unhealthy gut as a well-balanced ecosystem whose flora supports their health – not yours.

The Giant African Land Snail can grow as big as a rat, can chew through stucco and eats any plants in its path...  
Oh, yes – it can also cause meningitis if touched. It recently invaded Miami.

Invasive species in ecosystems present a good model. From [Scotch broom](#) to [zebra mussels](#), [invasive species](#) from other countries are creating havoc in ecosystems from across the U.S. The changes can be enormous. The entire native grass population in California was essentially relegated to a minority player by annual grasses from the Mediterranean that were better adapted to cattle grazing and disturbance. Some states like [North Carolina](#) have over 100 different invasive species.

A common factor in many invasive species invasions (which fits with our model of chronic fatigue syndrome) is a disturbance of some kind that opens the door to invasive species.

Getting rid of invasive species once they've become entrenched, however, is very difficult.

Now think of a CFS gut as having several [invasive species](#). Some sort of disturbance occurred – a virus, some new bacteria, problems with the gut lining, immune activation – whatever, and some invasive microbial species either swept in or took advantage of the disturbance and multiplied greatly. You now have a new gut ecosystem ...

You can

- Exterminate them
- Introduce aggressive native species to push them out, often this needs the soil to be augmented to allow the native species to fare better
- Introduce a natural predator (which can compound the problem often)

With invasive species in the gut, there are similar options. In this post I will look at the most natural way, introducing healthy good species.

## A Microbiome Fight For Survival

Probiotics are bacteria. They are bacteria that appear to be *harmless to humans* and may have beneficial effects. Often one species of a family will try to kill off other species of the *same* family. Taking several probiotics at the same time could result in less benefit and more cost than just doing one at a time.

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Many common commercial gut bacteria tests count that count the *volume* of a family of bacteria do not determine if they are good ones or bad ones. There are three levels in describing a probiotic or a bacteria:

- the family ([lactobacillus](#), [bifidobacterium](#), [escherichia](#), etc)
- the species, usually designated by the second name (lactobacillus acidophilus, bifidobacterium thermophilum, escherichia coli (E.Coli), etc)
- the strain, often designated by a number or a set of characters (E.Coli Nissle 1917, Bifidobacterium Infantis 35624, lactobacillus reuteri JCM1112)

We have dogs (family) which are Welsh Pembroke Corgis (species), two of them were from the same kennel (strain) and these two have very similar looks and personalities. If you are looking for a creature to guard chickens, picking any dog from a pound at random may not have good outcomes. That sweet chihuahua may not keep away the coyotes (and may need frequent replacement). The same happens with probiotics.

Most people in the US believe that all E.Coli are dangerous, but there are good E.Coli and bad E.Coli. (In fact, several E.Coli **probiotics**, both over the counter and via prescription are available in Europe). Similarly, most alternative medicine people believe lactobacillus are all good, but [lactobacillus endocarditis is a known killer](#). We must be very careful of over generalizing in this area.

## A Probiotic Catch-22 in the U.S.

“a problematic situation for which the only solution is denied by a circumstance inherent in the problem or by a rule,” i.e. if clinical trials have proved a probiotic is effective, you may not be able to get it in the U.S.

There’s an interesting catch-22 with probiotics. Probiotics demonstrated in clinical trials to be effective are categorized as a [biologic](#) medical product, may require a prescription, and are subject to control by the FDA. Probably the best studied probiotic product, Mutaflor, was pulled from the U.S. market after the FDA deemed that it was a ‘biologic product’. [Mutaflor contains an E.Coli strain called ‘Nissle 1917’](#), which was identified in 1917, and has been studied for over 90 years. You can buy it over the counter in Europe, but can’t get it in the U.S. It has been used successfully for Crohn’s Disease, and two well know CFS physicians in Europe often ask their patients to take it (Dr. Myhill (UK), and Dr. De Meirleir (Belgium)).

Probiotics that have not been clinically studied, and which may do little or no good, on the other hand, are readily sold. Mutaflor’s efficacy was dependent on a specific **strain** of e. coli. Despite that fact that probiotic strains can vary markedly in efficacy, probiotics or yogurt containing probiotics, often focus solely on the family, and rarely specify the strains present. “**Five billion lactobacillus and bifidobacterium**” may appear on the package with no details about species or strains.

The ideal situation is to have:

- The family, species and strain to be declared on the probiotic
- Research papers show a specific strain has clear benefits for ME/CFS or a comorbid condition.

The good news is that there are a few such probiotics, the bad news is that they are rarely found in health food stores!

## The Lactobacillus Reality

Often our efforts to ‘right’ our gut flora’s are often misguided. Many people, for instance, believe that Lactobacillus is the dominant bacteria in the gut, and the more lactobacillus bacteria they take, the better off they’ll be. This is actually false.

*“It is somehow intriguing how lactobacilli could maintain a reputation as numerically important intestinal inhabitants, given that the vast majority of experimental studies conducted after 1960 clearly showed that they form **marginal populations** in the human gut.” [2008]*

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A [recent paper](#) states “It is important to note that the majority of **traditional** probiotic strains are probably allochthonous to (not originally part of) the intestinal tract, and they show very little ability to persist in the human gut.”

A [2009 article](#) provides some interesting insights:

- Members of the genera *Bacteroides*, *Eubacterium*, *Clostridium* and *Ruminococcus* were the major species found in the adult microbiota. – Lactobacillus species are a minor player.
- For instance, *E. coli* K12 had a ratio of 3.4% for adult gut-enriched genes, - there are other E.Coli present.

*Lactobacillus acidophilus* is easily the most well-known (and advertised) *Lactobacillus* species, but *Lactobacillus reuteri* is more commonly found in humans. *L. reuteri* may have special significance for people with chronic fatigue syndrome because it produces B12. If you are low in B12, as many people with ME/CFS appear to be, then your *L. reuteri* levels are likely very low or non-existent. Instead of doing B12 shots or pills, you might be better off taking *L. reuteri* and having this species making your own B12.

## The Lactobacillus You Want

There are two good members of the lactobacillus family of bacteria to consider:

- [Lactobacillus reuteri](#) — produces B12 and is the dominant *Lactobacillus* species in healthy animals (and humans)
- [Lactobacillus rhamnosus](#) — some strains have positive effects on the brain, and others have a negative effect<sup>[1]</sup>, so you need to know the strain and then check the research papers.

**Personal Observations** : I noticed in my last remission was that one spice-herb-supplement resulted in one or two symptoms disappearing and having no effect on the other symptoms. I have also observed [very distinctive changes](#) from specific probiotics which I describe on my own blog.

I believe different strains of bacteria cause specific symptoms. You may eliminate a few symptoms from each spice-herb or probiotic. You may need to rotate through many of them to eliminate most of the symptoms

## Escherichia coli

There is only one commercial probiotic available without prescription (and not in all countries), [E.Coli Nissle 1917](#) also known as Mutaflor. It has been in use for over 90 years (longer than most *Lactobacillus* probiotics). CFS patients appear to be very low in *E.Coli*.

## Bifidobacterium Infantis 35624

This species and the “soil bacteria” listed below have been demonstrated to be effective for IBS. IBS is very common in CFS and thus both of them have evidence of being beneficial for CFS symptoms. This is patented and sold as [Align Probiotics](#) and [very well reviewed](#) on Amazon.

Walgreen's have a different strain (same species) available in their [Walgreens 4x Probiotic Digestive Care Supplement](#). There are no studies on it — but it is reasonable to assume similar benefits (may be less or may be more).

## “Soil Bacteria”

Don't forget your dirt!

The mother's microbiome appears to be DNA compatible with the child. Mother's pass their microbiome to their

children by the children sticking their fingers into their mother's and father's mouths. Messy kids are likely healthy kids. Microbiomes from another person may be rejected or fail to thrive because they are not compatible with the person's DNA. Our Victorian sense of cleanliness may be doing us, and our children significant harm.

Some commercial probiotics contain a large number of common soil bacteria. One, [Prescript Assist](#) has been found in a clinical trial to be effective for IBS: Most of these bacteria are not available in any other way for human consumption (they are, however, available in some animal feeds). Because these are soil based, they are robust and do not require refrigeration. Prescript Assist includes

- *Anthrobacter agilis*,
- *Anthrobacter citreus*,
- *Anthrobacter globiformis*,
- *Anthrobacter luteus*,
- *Anthrobacter simplex*,
- *Acinetobacter calcoaceticus*,
- *Azotobacter chroococcum*,
- *Azotobacter paspali*,
- *Azospirillum brasiliense*,
- *Azospirillum lipoferum*,
- *Bacillus brevis*,
- *Bacillus marcerans*,
- *Bacillus pumilis*,
- *Bacillus polymyxa*,
- *Bacillus subtilis*,
- *Bacteroides lipolyticum*,
- *Bacteriodes succinogenes*,
- *Brevibacterium lipolyticum*,
- *Brevibacterium stationis*,
- *Kurtha zopfil*,
- *Myrothecium verrucaria*,
- *Pseudomonas calcis*,
- *Pseudomonas dentrificans* – produces B12
- *Pseudomonas fluorescens*,
- *Pseudomonas glathei*,
- *Phanerochaete chrysosporium*,
- *Streptomyces fradiae*,
- *Streptomyces cellulosae*,
- *Streptomyces griseoflavus*.

Another product, Floracol Generation Plus, contains almost the same species:

- *Lactobacillus sporogenes*,
- *Arthrobacter agilis*,
- *Arthrobacter citreus*,

- *Arthrobacter globiformis*,
- *Arthrobacter leuteus*,
- *Arthrobacter simplex*,
- *Azotobacter chroococcum*,
- *Azotobacter paspali*,
- *Azospirillum brasiliense*,
- *Azospirillum lipoferum*,
- *Bacillus brevis*,
- *Bacillus macerans*,
- *Bacillus pumilus*,
- *Bacillus polymyxa*,
- *Bacillus subtilis*,
- *Bacteroides lipolyticum*,
- *Bacteroides succinogenes*,
- *Brevibacterium lipotycum*,
- *Brevibacterium stationis*,
- *Kurtha zopfil*,
- *Myrothecium verrucaria*,
- *Pseudomonas calcis*,
- *Pseudomonas dentrificans*,
- *Pseudomonas fluorescens*,
- *Pseudomonas glathei*,
- *Phanerochaete chrysosporium*,
- *Streptomyces fradiae*,
- *Streptomyces cellulosa*,
- *Streptomyces griseoflavus*

## Yogurts, Kefers and other bacteria laden foods

The first question is simple: which species are you getting? A good product will list the species, and generally, the longer the list (especially of non-lactobacillus species), the more likely it will be beneficial to you.

The Kefir below is well labelled and has 5 non-lactobacillus species in it (and 10 species in total!). It's also from Trader Joe's and thus good value for the money! When you shop for yogurt, kefirs etc — read the labels carefully — all fermented milk products are not the same.

Trader Joe's Kefir Species

## Bottom Line

Much more study is needed before we can be clear about which probiotics to take, but we do have a few arrows in our quiver now.

Most gut tests measure the amount of a family of bacteria. A very small number of tests identify the species. An even smaller number measure the exact strains. Even if we know the precise strains, we do not know the health effects (or side effects) of 99.9% of the strains. We do not have strains available as probiotics commercially (some

are available, but only in a research context).

IMHO, we only have a few possibilities in our arsenal at this point. The two dominant ones are Prescript Assist and Mutaflor.

**Personal Note:** My wife and I have observed that they do not compliment each other when taken together, i.e. we get less positive change from both together than taking either by it self. Our usual practice is to do 7-10 days on one, take a 7 day break, then 7-10 days on the other and another 7 day break before repeating. With mutaflor, studies have shown that minocycline does not decrease its effectiveness.

## Changing the Gut Flora Series

- [Changing Your Gut Flora Pt I: Food to Feed the Good Bacteria in Chronic Fatigue Syndrome](#)
- [Changing Your Gut Flora II: Changing the Gut Ecosystem with Probiotics](#)
- [Changing Your Gut Flora III – Change Agents: Prescription and Herbal Antibiotics to Alter the Gut Flora in Chronic Fatigue Syndrome](#)

Find more of [Ken's blogs here](#).

*Ken Lassesen is a recovered patient not a doctor. His blogs are for informational purposes only. Please check with your health practitioner before changing your treatment protocols.*