

DIVERSITY	<b>Shannon Diversity</b> The Shannon Diversity index is a calculation of the species richness and species evenness. High diversity is one measure that correlates with good health.  <b>Microbial Diversity</b>	<b>Low is not an ideal level</b> ❌ Consider increasing the types of prebiotic fibres in the diet, using the prebiotic tool in the patient's report.	<b>Avg is about continuing progress</b> ✅ Keep doing what you are doing, and consider increasing the types of prebiotic fibres in the diet, using the prebiotic tool in the patient's report.	<b>High is a great level</b> ✅ A high diversity means high functional redundancy, resiliency and resistance to pathogens. Well done! Keep doing what you are doing, in terms of plant fibres in your diet.
	<b>Human DNA</b> A high amount (greater than 4%) of human DNA may indicate gut inflammation.  <b>Sample Composition</b>	<b>Low or ND is a good level</b> ✅ This is a good level and no action is needed. The healthy group average is 0.27% human DNA.	<b>1-4% may require action</b> ❌ If levels are above 1%, this may be an indication of mild inflammation. If there are other GI symptoms, consider further investigation.	<b>&gt;4% may require action</b> ❌ If levels are above 4%, this may be an indicator of inflammation. Further exploration of GI conditions is warranted.
COMPOSITION	<b>Fibre Digestion Potential</b> Fibre is the preferred energy source of gut bacteria, who break it down into beneficial short chain fatty acids.  <b>Microbiome Digestion Potential</b>	<b>Low is not an ideal level</b> ❌ Increase the amount and diversity of prebiotic fibre in the diet, using the prebiotic suggestions provided.	<b>Avg is a good level</b> ✅ Continue to eat diverse sources of fibre to maintain this important gut microbiome function.	<b>High is a great level</b> ✅ Continue to eat diverse sources of fibre to maintain this important gut microbiome function.
	<b>Protein Digestion Potential</b> When adequate fibre does not reach our distal colon, species that can break down protein tend to increase in abundance along with the potential to produce pro-inflammatory metabolites.  <b>Microbiome Digestion Potential</b>	<b>Low is a good level</b> ✅ Continue to eat diverse sources of fibre to prevent high levels of protein-degrading bacteria from growing.	<b>Avg is a good level</b> ✅ Continue to eat diverse sources of fibre to prevent high levels of protein-degrading bacteria from growing. If towards the high end of average, add more resistant starch to the diet.	<b>High is not an ideal level</b> ❌ Consume more complex fibres such as resistant starch that will make it to the lower colon. Assess diet to make sure protein consumption is not overly excessive.
DIGESTIONS POTENTIAL	<b>GABA Production</b> GABA is primarily produced by your body, but some bacterial species can also produce (and consume) GABA. Low levels of GABA in the blood serum have been associated with depression and anxiety.  <b>Microbial Metabolites &gt; Neuroendocrine</b>	<b>Low is a typical level</b> — No action is needed. This means the gut bacteria are not contributing to the overall amount of GABA produced in the body.	<b>Avg is a good level</b> ✅ The gut microbiome has the potential to produce GABA, which may contribute to the body's overall amount of circulating GABA. This may have a positive effect on mental health, though more study is needed.	<b>High is a good level</b> ✅ The gut microbiome has a high potential to produce GABA, which may contribute to the body's overall amount of circulating GABA. This may have a positive effect on mental health, though more study is needed.
	<b>IPA</b> 3-indolepropionic acid (IPA) is a strong anti-oxidant produced by some gut bacteria that can help protect the nervous system from damage and may help prevent type 2 diabetes, suppress inflammation and maintain the gut barrier.  <b>Microbial Metabolites &gt; Neuroendocrine</b>	<b>Low is not an ideal level</b> ❌ This isn't an ideal level. Increase the amount of prebiotic fibres in the diet, and in particular the wholegrain rye.	<b>Avg is a good level</b> ✅ The gut microbiome is likely providing some protection from insulin resistance and nerve cell damage, and may be helping to suppress inflammation. Keep eating diverse prebiotic fibres, including rye.	<b>High is a good level</b> ✅ The gut microbiome is likely providing some protection from insulin resistance and nerve cell damage, and may be helping to suppress inflammation. Keep eating diverse prebiotic fibres, including rye.
METABOLITES NEUROENDOCRINE	<b>Histamine</b> Histamine plays an important role in immune regulation, gut function and the nervous system. Gut microbes that can produce histamine have been observed at increased levels in patients with asthma.  <b>Microbial Metabolites &gt; Neuroendocrine</b>	<b>Low is a good level</b> ✅ The gut microbiome is unlikely to be contributing to the body's overall histamine load.	<b>Avg may require action</b> ❌ The gut microbiome may be contributing to the body's overall histamine load, however, individual genetics play a part here too. Consider this level in the context of the symptoms presented.	<b>High may require action</b> ❌ The gut microbiome may be contributing to the body's overall histamine load, however, individual genetics play a part here too. Consider this result in the context of the symptoms presented.
	<b>Butyrate</b> Butyrate is the main fuel source for gut cells, helps keep the gut cell barrier intact, suppresses inflammation, helps control appetite, and promotes the production of serotonin in the gut.  <b>Microbial Metabolites &gt; SCFA</b>	<b>Low is not an ideal level</b> ❌ Look to increase the consumption of foods containing resistant starch using the food suggestions tool in the Insight™ report.	<b>Avg is about continuing progress</b> ✅ Keep up the good work and continue eating foods high in resistant starch to maintain this important gut microbiome function.	<b>High is a good level</b> ✅ Keep up the good work and continue eating foods high in resistant starch to maintain this important gut microbiome function.
METABOLITES SHORT CHAIN FATTY ACIDS	<b>Propionate</b> Propionate helps maintain blood glucose levels, can reduce inflammation, helps control appetite and promotes the production of serotonin from the gut.  <b>Dig-deeper tab &gt; Microbial Metabolites &gt; SCFA</b>	<b>Low is not an ideal level</b> ❌ Look to increase the amount of fruits, vegetables, legumes and grains in the diet.	<b>Avg is about continuing progress</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.	<b>High is a good level</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.
	<b>Acetate</b> Acetate is the most abundant short chain fatty acid produced in the gut. It plays an important role in fat metabolism, glucose metabolism and the immune system.  <b>Microbial Metabolites &gt; SCFA</b>	<b>Low is not an ideal level</b> ❌ Increase the amount of fruits, vegetables, legumes and fibre in the diet.	<b>Avg is about continuing progress</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.	<b>High is a good level</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.
<b>Lactate</b> Lactate/lactic acid can reduce inflammation, help maintain the gut cell barrier, and reduce colonisation by pathogens by lowering the pH in the gut.  <b>Microbial Metabolites &gt; SCFA</b>	<b>Low is not an ideal level</b> ❌ Increase consumption of foods containing fructooligosaccharides and galactooligosaccharides using the food suggestions.	<b>Avg is about continuing progress</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.	<b>High is a good level</b> ✅ Keep up the good work and continue eating diverse sources of fibre to maintain this important gut microbiome function.	

METABOLITES HEALTH INDICATOR	<b>Trimethylamine (TMA) Production</b> TMA is a compound produced by some microbes that is linked to cardiometabolic diseases. TMA produced in the gut is transported to the liver, where it can be converted to TMAO. A high level of TMAO in the blood plasma is strongly associated with cardiometabolic disease. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✗	<b>High</b> <i>may require action</i> ✗
	No action is needed. Keep up the good work and continue eating a diet with diverse sources of prebiotic fibres	The potential to produce high amounts of TMA increases your risk of several diseases. Increase fibre consumption, and in particular cruciferous vegetables that are high in Diindolylmethane (DIM) such as broccoli, kale, cabbage, cauliflower, brussel sprouts, etc... In addition, reduce excess red meat and eggs in the diet.	The potential to produce high amounts of TMA increases your risk of several diseases. Increase fibre consumption, and in particular cruciferous vegetables that are high in Diindolylmethane (DIM) such as broccoli, kale, cabbage, cauliflower, brussel sprouts, etc... In addition, reduce excess red meat and eggs in the diet.	
	<b>Trimethylamine (TMA) Consumption</b> TMA can also be used as an energy source by some gut bacteria, thus reducing levels of TMA. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a typical level</i> ✓	<b>Avg</b> <i>is a good level</i> ✓	<b>High</b> <i>is a good level</i> ✓
	This means gut bacteria are not helping reduce TMA levels. If TMA production potential is high, increase consumption of cruciferous vegetables.	The gut microbiome has capacity to consume TMA, which may help offset the effects of any TMA produced by the gut microbiome.	The gut microbiome has a high potential to consume TMA, which may help offset the effects of any TMA produced by the gut microbiome.	
	<b>Ammonia</b> Excess ammonia production has been observed in individuals with impaired gut barrier function and inflammation of the gut. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>is a good level</i> ✓	<b>High</b> <i>is not an ideal level</i> ✗
	This is good level and no action is needed.	If on the higher end, look to increase fibre consumption.	Increase the amount and diversity of foods that are high in prebiotic fibres using the food suggestions list.	
	<b>B. fragilis toxin</b> A toxin which can cause symptoms such as diarrhoea in some people. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✓	<b>High</b> <i>may require action</i> ✗
	This is good level and no action is needed.	If on the higher end, and if the patient is experiencing GI symptoms including diarrhea, further medical investigation is suggested.	This may be a concern and if the patient is experiencing GI symptoms including diarrhea. Further medical investigation is suggested.	
	<b>Beta-glucuronidase</b> Some bacteria use beta-glucuronidase to get energy from compounds the body has deactivated (e.g. drugs and hormones), thus re-activating the compound and possibly increasing sensitivity to specific medicines/hormones. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✓	<b>High</b> <i>is not an ideal level</i> ✗
	This is good level and no action is needed. The gut microbiome will not be contributing to increased sensitivity to medicines/hormones.	The gut microbiome may be contributing to increased sensitivity to specific medicines/hormones. If on the higher end, consider incorporating foods high in calcium D-glucarate like apples and broccoli to inhibit this function.	The gut microbiome may be contributing to increased sensitivity to specific medicines/hormones. Incorporate foods high in calcium D-glucarate like apples and broccoli to inhibit this function.	
<b>Hydrogen sulphide</b> Hydrogen sulphide can be protective of the gut at low levels, however at high levels it can inhibit mitochondrial function and disrupt the gut cell barrier. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✓	<b>High</b> <i>is not an ideal level</i> ✗	
No action is needed. Hydrogen sulphide can be protective of the gut at low levels, however at high levels it can inhibit mitochondrial function and disrupt the gut cell barrier.	If on the higher end, look to increase consumption of foods containing fructooligosaccharides and resistant starch from the food suggestions to inhibit this function.	Increase consumption of foods containing fructooligosaccharides and resistant starch from the food suggestions to inhibit this function.		
<b>LPS</b> LPS is an inflammatory compound produced by some species of bacteria within the Proteobacteria phylum. Diets high in saturated fat allow LPS to cross the intestinal barrier and enter the bloodstream and may contribute to metabolic and inflammatory conditions. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✓	<b>High</b> <i>is not an ideal level</i> ✗	
This is a good level and no action is needed. Continue eating a diet with diverse sources of prebiotic fibres to prevent growth of LPS-producing Proteobacteria.	If on the higher end, try to shift the microbiome away from Proteobacteria by introducing more prebiotic fibres from the food suggestions.	Try to shift the microbiome away from Proteobacteria by introducing more prebiotic fibres from the food suggestions.		
<b>BCAA</b> High levels of microbial BCAAs have been associated with metabolic diseases. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a good level</i> ✓	<b>Avg</b> <i>may require action</i> ✓	<b>High</b> <i>is not an ideal level</i> ✗	
No action is needed. Low levels of branched chain amino acids may have beneficial effects on the gut-associated immune system.	If on the higher end, increase the diversity of prebiotic fibres in the diet	Increase the amount and diversity of prebiotic fibres in the diet.		
<b>Oxalate consumption</b> People who suffer from repeated unexplained kidney stones tend to have a reduced potential for oxalate degradation in their microbiome compared to non-stone formers. <b>Microbial Metabolites &gt; Health indicator</b>	<b>Low</b> <i>is a typical level</i> ✓	<b>Avg</b> <i>is a good level</i> ✓	<b>High</b> <i>is a good level</i> ✓	
No action is needed. The gut microbiome is not contributing to the breakdown of oxalates.	The microbiome has the capacity to break down oxalates and this may help counter the development of calcium oxalate kidney stones	The microbiome has the capacity to break down oxalates and this may help counter the development of calcium oxalate kidney stones.		
<b>Folate</b> Folate plays an important role in cell replication and repair and deficiencies can result in an increased risk of heart disease, anemia, stroke, and neural tube defects in newborn infants. <b>Microbial Metabolites &gt; Essential Vitamins</b>	<b>Low</b> <i>is not an ideal level</i> ✗	<b>Avg</b> <i>is a good level</i> ✓	<b>High</b> <i>is a good level</i> ✓	
The gut microbiome is not contributing folate to the body, so ensure adequate folate is obtained from the diet.	The gut microbiome is likely contributing a portion of the body's daily folate requirement.	The gut microbiome is likely contributing a portion of the body's daily folate requirement.		