The intestine has the paradoxical double function of being an absorbing organ as well as a barrier against penetration of toxic compounds and macromolecules. Both of these functions can be disturbed by various mechanisms such as inflammation, oxidative stress, dysbiosis, bacterial overgrowth and food reactions. This may result in localized symptoms such as flatulence, rumbling tummy, stomach pain/vomiting, constipation, diarrhea or general discomfort as well as more systemic problems such as fatigue and joint pain. Therefore, a precise assessment of intestinal function is very useful in relation to creating an individualised treatment protocol.

IPA test

The theory behind the IPA test has been comprehensively reviewed, and by evaluating the past 30 years scientific literature, it is now possible to obtain a more in-depth understanding about intestinal function. The IPA test differs from other intestinal permeability tests in that it analyses five types of sugar and their correlative enzymes as assessed in urine. Therefore, a precise assessment of intestinal function is very useful in relation to creating an individualised treatment protocol. Intestinal absorption mechanisms are rather complex; roughly speaking, around three pore sizes are found in the intestinal villi. The outermost part of the intestinal villi (duodenum) and of sucrose intolerance. With a decreasing ratio, intestinal damage may be observed more distally. The small-intestinal brush border enzyme sucrase (in the duodenum) is an indication of low activity of the enzyme sucrase in the small intestine (primarily the jejenum). As mentioned above, mannitol is a small sugar molecule, the absorption of which is limited in cases of intestinal inflammation or damage, as in coeliac disease or Crohn’s disease. A high raffinose/mannitol ratio is an indication of damage to the epithelial cells in the duodenum.

The test is relevant for patients with the following symptoms and clinical conditions:

- Intestinal villi (crypts) located in the crypt (bottom) of the intestinal villi, and the medium-sized pores are located in between the other pores of the intestinal villi. The outermost part of the intestinal villi (duodenum) and of sucrose intolerance. With a decreasing ratio, intestinal damage may be observed more distally. The small-intestinal brush border enzyme sucrase (in the duodenum) is an indication of low activity of the enzyme sucrase in the small intestine (primarily the jejenum). As mentioned above, mannitol is a small sugar molecule, the absorption of which is limited in cases of intestinal inflammation or damage, as in coeliac disease or Crohn’s disease. A high raffinose/mannitol ratio is an indication of damage to the epithelial cells in the duodenum.

The test result contains the above-mentioned sugar mixtures as well as the other collection components. The sugar mixture is dissolved in a glass of water to be drunk before dinner. During the night and the following morning, the urine is collected in the measuring cup enclosed, and the contents are measured at least 6 hours after ingestion of the sugar solution. Approx. 20 ml is transferred to a test tube and sent to Nordic Laboratories for further analysis.

Sample collection

The test result contains the above-mentioned sugar mixtures as well as the other collection components. The sugar mixture is dissolved in a glass of water to be drunk before dinner. During the night and the following morning, the urine is collected in the measuring cup enclosed, and the contents are measured at least 6 hours after ingestion of the sugar solution. Approx. 20 ml is transferred to a test tube and sent to Nordic Laboratories for further analysis.

Test result

The test result contains the above-mentioned sugar mixtures as well as the other collection components. The sugar mixture is dissolved in a glass of water to be drunk before dinner. During the night and the following morning, the urine is collected in the measuring cup enclosed, and the contents are measured at least 6 hours after ingestion of the sugar solution. Approx. 20 ml is transferred to a test tube and sent to Nordic Laboratories for further analysis.

Experience from research and clinical use of the IPA test shows that it may be important to be aware of certain patterns in the results. The patterns are shown below.

<table>
<thead>
<tr>
<th>Lactose</th>
<th>Raffinose</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ Lactose resistance due to inflammation - suggested damage to the intestinal epithelium in the jejunum.</td>
<td></td>
</tr>
<tr>
<td>↑ Raffinose resistance due to inflammation - suggested damage to the intestinal epithelium in the duodenum.</td>
<td></td>
</tr>
<tr>
<td>→ Lactose/Raffinose ratio: indicates distal damage to the small intestine.</td>
<td></td>
</tr>
<tr>
<td>↓ Lactose/Raffinose ratio: indicates proximal damage to the small intestine.</td>
<td></td>
</tr>
</tbody>
</table>

Interpretation patterns

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10. Lobley, R. W., Burrows, P. C., Warwick, R., Dawson, D. J. & Holmes, R. Simultaneous assessment of intestinal permeability and lactose tolerance with orally administered


References

Contact us for more information

If you would like more information about our tests or have any other questions, then please feel free to give us a call or contact us by email. We are more than happy to help.

Nordic Laboratories

 IPA-analysis

(Intestinal permeability and absorption capacity)

Why settle for 2 sugars, when 5 makes life sweeter?

At Nordic Laboratories, we are innovative thinkers. We want to challenge laboratory science to offer testing that enables you to identify the causes of digestive conditions and thus help ensure that the best possible treatment can be implemented. Based on our review of the scientific literature from the past 30 years, we have arrived at the most comprehensive test for assessing intestinal permeability and absorption capacity.

The 5-part test measures five types of sugar as opposed to the two types analysed in conventional permeability tests. Analytical results for five types of sugar provide additional knowledge of and insight into intestinal function – enabling you to offer individually optimised treatment protocols.

Nordic Laboratories was founded in 1989 with the goal to provide patients and practitioners with reliable laboratory test results. Since then, we've become a leading European laboratory test distributor. We are completely independent and, as a result, are able to choose laboratory assessments from a wide range of suppliers, based on the individual quality and value of each test.

Our commitment to deliver the highest quality laboratory evaluations allows us to serve clients from Scandinavia to Spain, the UK to Hong Kong, the Middle East, and South Africa.

Our clients receive their test results promptly and have access to the highly qualified members of the Nordic team, who can assist them with their order.

As a part of the Nordic Group of companies, we are intent on incorporating a functional medicine approach into modern medicine. This passion for health and sustainability is reflected in everything we do.

References

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