

gut

the Inside Story of Our Body's Most Underrated Organ

exhibition
4 December 2018
— 4 August 2019

PRESS KIT

cité

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“Cité des Sciences et de l’Industrie has taken up the challenge of adapting a book, and not an insignificant one, to an exhibition; it is a process that is not unlike adapting a book to the screen. The book in question is the bestseller by Giulia and Jill Enders *Gut: The Inside Story of Our Body’s Most Underrated Organ*. The exhibition was conceived in conjunction with the authors and with support from the French National Institute for Agronomic Research. With its expressive set design, it takes us on a journey into the core of our body to discover one of its most secret regions, the ‘second brain’ that is so crucial to our health.”

Bruno Maquart,
president of Universcience

“**Attention, science fraîche !**” is a series presenting exhibitions on scientific developments and their impact, whether they concern the physical world or living organisms. The focus is on any topic in science that furthers our knowledge in interesting ways..

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INTRODUCTION

Cité des Sciences et de l’Industrie presents the exhibition *Gut* from 4 December 2018 to 4 August 2019.

The exhibition is based on the book by Giulia and Jill Enders, *Gut: The Inside Story of Our Body’s Most Underrated Organ* (2014), which sold 1,200,000 copies and has been translated into more than 40 languages. In an area of 600 m², it tells the incredible story of microbiota, more commonly known as gut flora. This microscopic universe, as complex as it is little known, never ceases to surprise us: we all have our own unique microbiota, constantly evolving, but still as individual as a fingerprint.

As counterintuitive as it may seem, the human body is made up not only of flesh, blood, bone and muscle, but also of a whole world of bacteria, viruses and fungi. A veritable ecosystem, 99% of which are found in the gut! Over the past ten years, research in the field has given rise to the idea of the intestines as a “second brain”. The digestive system has its own nervous system and interacts with the organism during digestion. It acts as a coach to the immune system, and has close, pivotal relations with the brain.

Trilingual exhibition: French, English and Portuguese. Age 10 +

An exhibition in partnership with France’s National Institute for Agricultural Research, Heureka (Helsinki) and the Pavilion of Knowledge (Lisbon), afa Crohn RCH, Biocodex Microbiota Institut, Danone Research and the Roquette Foundation for Health.



EXHIBITION PATH

APPETIZER:

GUIDED TOUR OF DIGESTION

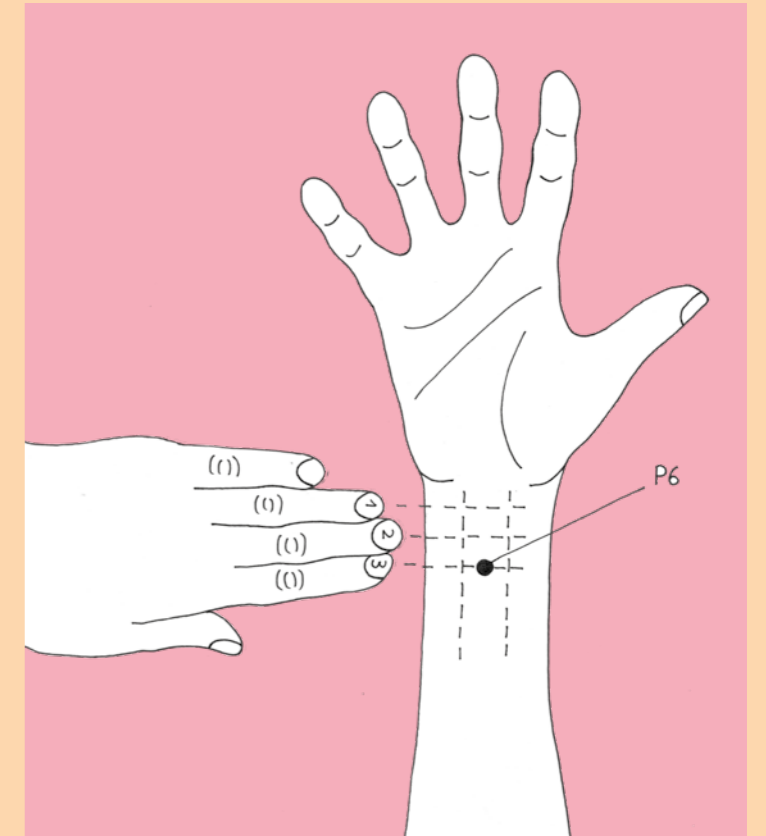
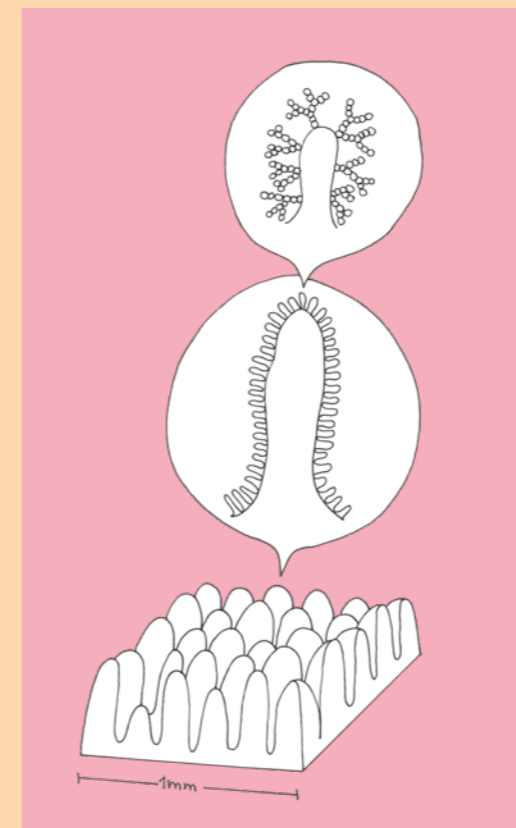
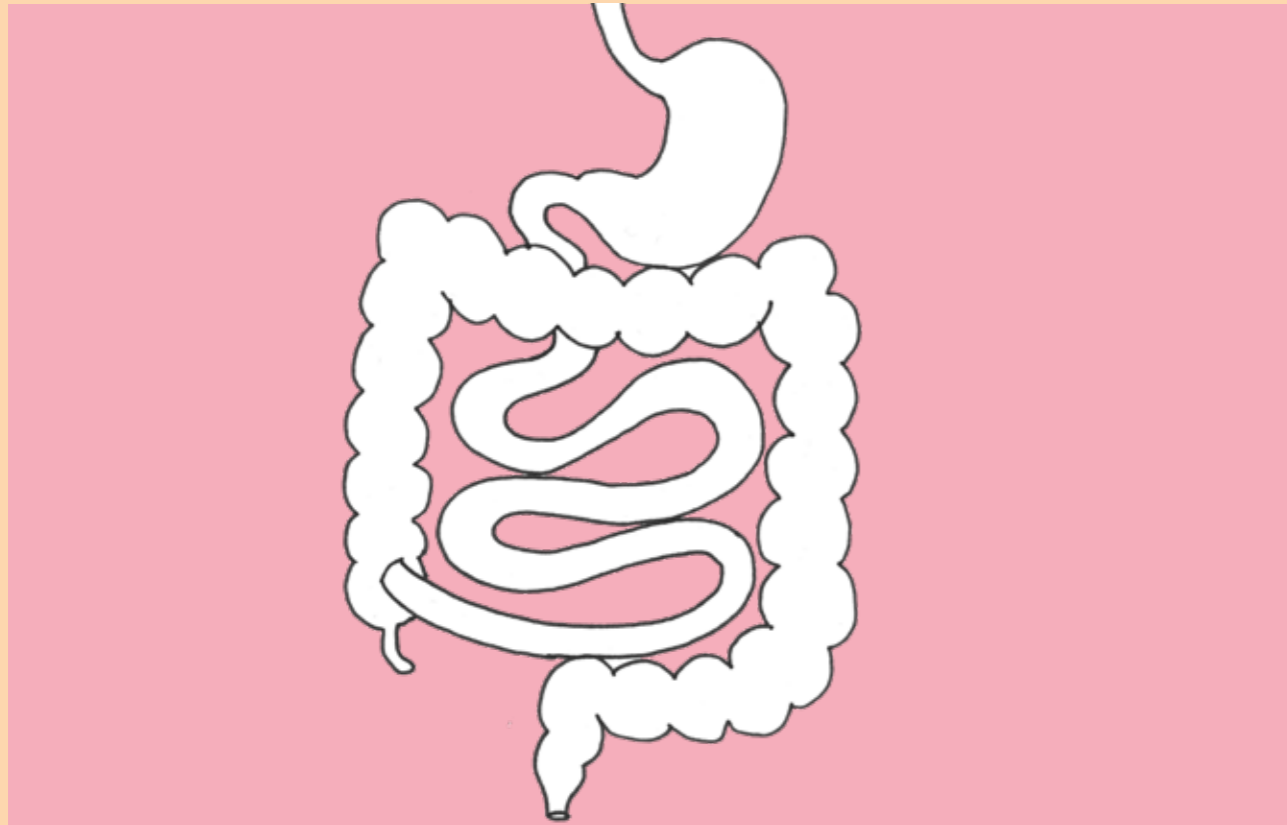
A giant mouth emitting funny sounds welcomes visitors at the entrance to the exhibition, inviting them to discover the digestive process and each organ involved in it from mouth to anus. Right off the bat, this introduction, and the many offbeat, frank and forthright individual exhibits that follow, turn a subject that might disgust more than one into an astounding and fascinating voyage of discovery.

The exhibition starts with an exploration of the digestive system. As visitors make their way along a horizontal giant figure, they discover astonishing films on swallowing, digestion and defecation seen through X-rays. At the foot of the giant, Magic mirror on the wall allows them to locate their own digestive organs, as they see themselves in the mirror with the outline of the various digestive organs superimposed over their bodies.

A display tucked away in a less-frequented alcove very discreetly exhibits human organs preserved using the technique of plastination –Treasures of the human body about which Giulia Enders provides an audio commentary.

The discovery of the digestive system continues with Explore our insides, an exercise in virtual autopsy that visitors conduct using a touch screen on a 3D scan of a body, and through which they travel to observe each organ. They can zoom in to the tiniest details, such as the lines of the oesophagus and the villi of the gut. This state-of-the-art device is presented in France for the very first time.

The surface area of the digestive tube is sixteen times greater than that of our skin. In other words, our “inside” is in more extensive contact with ambient air than our “outside”. And this “inside” is precisely what visitors can see thanks to a pill camera. Open the mouth of the figure and dive down the “pipes” From mouth to anus to inspect the villi of the small intestine and then the hollows and bumps of the large intestine.



The exhibition continues with the digestive organs, one after the other.

What is saliva, its role, its composition? Saliva is filtered blood, sieved by the salivary glands, which hold back the red blood cells, more useful in our arteries than in our mouth. Small concentrations of bactericidal substances are present in our saliva. Saliva plays the role of a protective firewall for our immune system. On the shelves, are bottles showing the super powers of saliva and listing its different components –mucin, antibodies, lysozyme, etc– like the ingredients of a precious elixir.

It takes a day on average for a bite of an apple to get from the mouth to the toilet. Visitors feed a figure and watch what happens in the mouth and in the gut: digestive organs which are terra incognita for most of us are brought to light. Mastication, grinding, swallowing, plunging, transformation and expulsion: it's a veritable Dance of digestion !

One side of the stomach is much shorter than the other, which is why it curls into large folds. One of the side effects of this lopsided stomach pouch with its lateral entry is the gastric bubble that forms in the upper part of. It is easier to burp when lying on our left side. This is something visitors can observe by turning the bust of a figure with an air bubble in its stomach.

■ VOMITING

A virus, a strong emotion, stress, or motion sickness can cause vomiting, which is the emergency response of the digestive system. It's the result of a preventive chain reaction to protect the body against toxic substances detected by receptors in our stomach. Depending on the intensity of the alarm bells, the brain decides whether or not to throw up. Note: the vomit will look different and have a different consistency depending on whether it is from the small intestine or the stomach. Two models in the exhibition demonstrate this.

■ INTOLERANCE OR ALLERGY?

Vomiting is not the only reaction of the body to an external food-related aggression. In the case of an allergy, it's the immune system that is expressing itself, translating its difficulty in breaking down a protein into amino acids. The allergy comes from the presence of tiny particles of protein in the bloodstream which the immune cells attack as foreign bodies. With each conflict, the allergy gets worse, as the reaction of the immune system intensifies. In the case of an intolerance, molecules whose bonds are not sufficiently broken down by a digestive enzyme are not absorbed by the organism. They continue into the large intestine where they become food for gas-producing bacteria. On an interactive wall, visitors trigger a food allergy or intolerance in the character facing them.



■ THE INTESTINE, EIGHT METRES LONG

Incredible but true: our stomach contains between three to six metres of small intestine, and a good additional meter or more of large intestine, called the colon. Together, the small and large intestines contain more than a thousand species of different bacteria. Visitors unwind and rewind an 8-metre rope representing the small intestine and the colon.

■ THE POOP ROOM

In a corner of the exhibition is a peculiar room dedicated to the subject of poop and defecation.

Position is the first question addressed. Is it better to sit or to squat? A muscle encircles the end of the gut forming a kink in the tube. The kink is there when we stand or sit. But when we squat, this muscle relaxes and the road for defecation opens up. Through an amusing exhibit Are you well-positioned? visitors can test several positions to see which works best.

What mechanism does the body use to decide whether to hold back or let go? It's all a matter of Sphincters! The inner sphincter and the outer sphincter at the anus adapt to various situations in deciding whether to fart, to poop or to hold back. Closely observing the rear end of a figure enables visitors to learn about this odd couple.

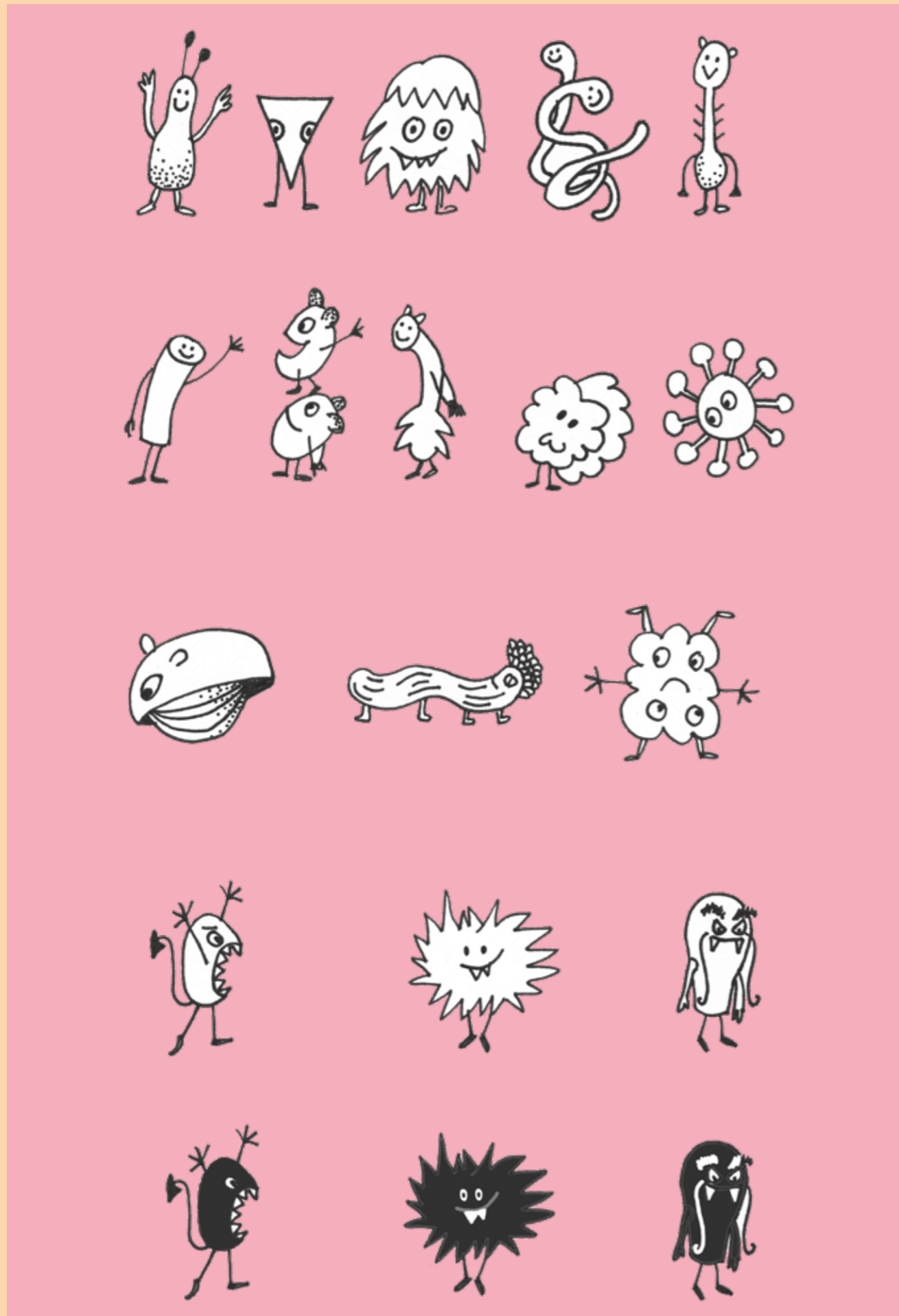
Once the thing has been unloaded into the toilet, its shape, colour and consistency provide a great deal of useful information. The Bristol stool scale classifies faeces in seven categories according to consistency: amusing facsimiles are observable.

Finally, visitors can sit on poop-shaped poufs and look through the Poop room book for tips on dealing with constipation, the use of laxatives and more, all in the humorous tone of the Enders sisters.

MICROBIOTA IN THE LIMELIGHT

The immersive visit continues with a portion of the gut whose wall is covered with tiny projections called villi. Have you ever heard of *Faecalibacterium Prausnitzii*, *Akkermancia muciniphila* or *Streptococcus salivarius*? These bacteria form the bulk of our microbiota, which is also made up of viruses, yeasts and other fungi.

The microbiota ensures our body's healthy balance and communicates with the immune system, the brain and the nervous system. Human beings build immune defences largely through contact with outside bodies. The contact takes place primarily in the digestive system, with the help of bacteria. Which is why preserving this foreign population is so essential to our health. Scientists are still far from knowing all the secrets of our microbiota. But from past research we already know that a healthy balance of gut flora is synonymous with a healthy organism, from a physical as well as a psychological and a behavioural standpoint.



The atmosphere and scale shifts as visitors walk through a short tunnel where Bacteria are everywhere. Entering a room whose walls are covered in projections like the gut wall with villi, they meet these organisms. The population of bacteria in the gut are not only around us, they are also inside us. But no need to worry. Only 1 percent of these micro-organisms on Earth is pathogenic and infectious.

After a stop at the Best of selfies, where visitors can take pictures of themselves surrounded by “good” and “bad” bacteria, drawn by Jill Enders, the exhibition continues with the tactile discovery of microbiota. It is made up of millions of micro-organisms, a “huge” proportion of bacteria, yeasts, archaea and viruses. A Microbiota to touch shows visitors how to identify these different populations, by comparing size, colour, shape and texture.

■ BACTERIA IN FIGURES

A few numbers tell visitors a great deal about this abundant population: 200, is the average weight in grams of our gut flora. A bacteria is 8 times smaller than a red blood cell and 20 times smaller than a white blood cell. And there are more bacteria in a single gram of excrement than human beings on Earth.

■ MEET THE SUPER BACTERIA

Bacteria can be both friend and enemy, depending on the context. A good case in point is the *Helicobacter pylori*. It is said to be opportunistic: it can help fight asthma but it can also produce substances that are toxic to nerve cells. Here, eight super star bacteria, drawn by Jill Enders, are hidden in a big scientific image of the gut, integrated into an interactive wall. Touch them and they will tell their story and explain their role in the human body.

■ MICROBIOTA: EATERS, FEEDERS

The bacteria in the large intestine feed the body, they make certain substances easier to digest and produce their own substances. They release energy and vitamins and break down toxins and medication. The goal for one or two players at this large multimedia game is to maintain a balanced microbiota by making sure its bacteria have enough to “eat” so they can “produce” the substances that are indispensable to our health.

How do scientists know as much as they do about bacteria they can never see given that they die in the presence of oxygen? This is what the “exhibition lab” explains by presenting some scientific tools and having visitors follow simplified research protocols.



■ THE CULTURE OF ANAEROBIC BACTERIA

In the 1960s Inra developed a technique to distinguish anaerobic and aerobic bacteria. Since 2015, this technique combined with miniaturisation has made it possible to culture anaerobic bacteria and define their optimal conditions of development. Here is the occasion to discover “culturomics”, the current laboratory paradigm in gut microbiome study.

■ METAGENOMICS

Metagenomics is the global analysis of the genes of a living organism. The human body contains 23,000 genes; the gut microbiota contains 500,000 million. Inra’s MetaHIT project is a major advance in scientific research, enabling the first sequencing of genomes of gut flora. A film produced specifically for the exhibition presents this now indispensable technique. It shows how it’s possible to identify living organisms in a population on the basis of their genes alone



■ BACTERIA-FREE MICE

Scientists manipulate special mice for research purposes: these mice are exenic, which means they are entirely free of all bacteria. Born in a sterile manner by Caesarian section, living in chlorine-disinfected cages, and fed sterilised food, these mice are characterised by a huge appendix, stunted intestines, no villi and few immune cells. And they require extreme care: a breath of unfiltered air will cause contamination, and the whole research protocol will have to be started over from scratch. To grasp the difficulty of working with these mice, visitors are invited to take the necessary precautions on artificial mice.

■ RECONSTRUCT THE STORY

Using exenic mice, which have a great capacity to ingest food without gaining weight, scientists have observed that, when injected with a microbiota of an overweight individual, they have a tendency to gain weight. The conclusion is clear: we know that individuals are influenced by their external environment but they are also by the population in their gut. Here bubbles of text are associated with the steps in a seminal research protocol on microbiota. It’s up to the visitor to recreate it!





GUT HEALTH

The last part of the exhibition shows visitors things they can do to promote beneficial microbiota. Practical conclusions from new scientific discoveries provide advice for everyday life about taking antibiotics, consuming fermented foods and household habits, which can sometimes be excessively hygienic.

■ LET'S CULTIVATE OUR MICROBIOTA

Human beings are influenced by their microbiota. And what's so fascinating is that each individual's microbiota is unique. At what point does the microbiota take shape in the organism? In what ways does it change and why isn't it the same throughout one's life? What is the difference between probiotics (ingested bacteria) and prebiotics (ingested food that the bacteria feed on)? All these questions are addressed in a film made for the exhibition.

■ EAT FIBRE!

We use the term "dietary fibres" to refer to what cannot be digested by the small intestines. Left undigested by the enzymes, they contribute to feeding our bacteria, which, well-nourished, will produce fatty acids and vitamins. A multimedia game invites visitors to choose which foods to eat to reach the recommended 30 grams a day.

■ DOMESTIC BACTERIA

Knowing that bacteria are everywhere and that 99% of them are harmless, visitors learn to identify where the "bad" bacteria are hiding among the "good" ones. Looking through the openings of a small house featuring different scenes of daily life, they come to understand why systematic use of antibiotics and excessive hygiene are to be avoided. Too much reduction of bacterial biodiversity is harmful, we must learn to clean in a fair and measured way.

■ FAECAL TRANSPLANTATION

Clostridium difficile is a bacterium that resists antibiotics and can then colonise the vacant place left by the antibiotic in the gut. This can cause years of diarrhoea, sometimes bloody, which is exhausting for the body and the mind. In such a situation, one daring potential treatment consists in transplanting tried and true bacteria along with all other intestinal bacteria from a healthy carrier. All you need is healthy excrements with their portion of bacteria. This is called faecal transplantation. The chances of success for this medical transplant increase when the poop has been specially prepared and "cleansed." Despite high cure rates of about 90%, this method is only being used, as of now, in really desperate cases, because we do not yet know if diseases or potentially dangerous germs are being transplanted as well in the stool of the donor. A short documentary explains this new therapy.

TIPS

Before leaving the exhibition, visitors can learn some very simple tips for keeping their microbiota healthy. These tips are presented on a wall composed of a series of strips of toilet paper placed vertically one over the other.

If there is one thing to retain from this exhibition it is that everyone has their own individual microbiota, composed of billions of microorganisms, mainly bacteria whose diversity and population depend on the person's diet, environment and way of life. This microbiota, which is constantly changing, can identify the individual as well as a fingerprint. The human being is by no means a planet disconnected from other living organisms.



IN CONNECTION WITH THE EXHIBITION

THE BOOK

■ LE CHARME DISCRET DE L'INTESTIN



New expanded edition, 2017, Giulia and Jill Enders, Éditions Actes Sud.

Excessive weight, depression, diabetes, skin diseases ... To what extent are these gut-related?

In this new expanded edition that inspired the exhibition, Giulia Enders, a doctor in medicine, presents recently published research, in particular with regard to the influence of this “second brain” on our health. She invites us to change our dietary habits and to apply very concrete rules that improve the health of our gut.

The book contains witty illustrations by the author’s sister, Jill Enders, a graphic artist.

Translated from German by Isabelle Liber, 350 pages.



Giulia Enders (b. 1990) is passionate about gastroenterology. Motivated by her own experience overcoming a skin disease, the young scientist pored over a great many gastroenterological studies.

A two-time scholarship winner, she has broadened her field of research and won first prize three times at the Science Slam in Berlin, when young German scientists present their innovative original work to the public.

A medical doctor since 2016, Giulia Enders continues conducting research in endocrinology.



Jill Enders is a German illustrator and graphic designer. In addition to *Le charme discret de l'intestin*, she illustrated a book on Alzheimer’s by Dr. Michael Nehls, *Guérir Alzheimer : comprendre et agir à temps* (Actes Sud, 2017).

The exhibition poster and many illustrations in the exhibition are also her work.

INTERVIEW

Your book ‘Gut: The Inside Story of Our Body’s Most Underrated Organ’ has been a true literary success. What attracted you to the project of adapting it as an exhibition at la Cité des Sciences et de l’industrie in Paris?

During the process of making the book we developed our own little world where bacteria were superheroes, slimy stay-at-homes or enthusiastic eaters and the gut wasn’t only a food processor but actually a helpful being that cares for us in many ways and is very reliable. To see this world not only in our imagination, but bring it even more to life by showing aspects of it in 3D was very tempting for us.

You take part in the design of the exhibition with Universcience team. Tell us more about this new experience for you?

I love producing things that get printed and go out into the world. Working together with the universcience team made it possible to make things in a really large scale, so people can for example, walk under a figure that I first drew on a little piece of paper. When Giulia and I work together my part is about ideas and drawings, when working together with a team out of so many people communicating gets very important so everyone is on the same page and carries the spirit of the book.

According to you what are the three main messages for the visitors?

I think the exhibition is very diverse and I can’t break it down to 3 main themes. I believe that knowing more about your own body is fun and I am excited about the real gut because I have never seen one in front of me.

Your book is full of advice, what are your top 3 tips?

- Listen to your own body. By understanding things in your body, it gets easier to treat it right.
- Our body is more involved in our mood than we know. Knowing this helps me to be more gentle with myself and my own mind.
- Don’t be too tidy. There is more good than bad bacteria and most of the time they don’t harm you. Use disinfectants only if you have good reasons. I love this part because it helps me to justify my cleaning skills, which hardly exist.

SPECIAL SESSIONS

Microbiota, we aren’t alone

Immunity, digestion: without microbiota, human beings could not live. This session will explore its role and functions in the body in relation to health.

From age 11 up / duration: 45 min. / starting 27 November 2018, in the exhibition’s Salle de Médiation

Do we have a second brain?

Exploration of the paths of communication between the nerve cells in the brain, those in the digestive system and gut flora, using specific examples, such as stress, hunger and neurodegenerative diseases.

From age 14 up / duration: 45 min. / starting 27 November 2018, in the exhibition’s Salle de Médiation

Canteen of microbiota

What impact do our eating and cultural habits, such as fasting, consuming fermented foods, using Chinese medicine, or prebiotics and probiotics, have on our gut microbiota and thereby on our health?

From age 11 up / duration: 45 min. / starting 27 November 2018, in the exhibition’s Salle de Médiation

A TRAVELING EXHIBITION

For the design of this exhibition, Universcience worked with the German authors of the book, Giulia and Jill Enders and with museum specialists at the Finnish and Portuguese museums that will be showing the exhibition after it closes in Paris. The joint project team conceived and designed the individual exhibition elements, defined the staging and ambiances and developed a common visit strategy.

Gut: The Inside Story of Our Body’s Most Underrated Organism will travel first to Lisbon, from 27 September 2019 to 30 August 2020, and then to Helsinki from the fall of 2020 to the summer of 2021.

LA CITÉ DE LA SANTÉ

Do you still have questions about the microbiota? Interested in reading the latest books and articles on the subject? Or meeting a health professional? La Cité de la Santé proposes a selection of resources available online and at the library (level -1). Open to the public free of charge Tuesday to Sunday, 12-6:45 pm..

www.universcience.fr/fr/cite-de-la-sante



PROJECT TEAM

Dorothee Vatinel, exhibition curator

Nathalie Puzenat and **Floriane Perot**, museum specialists

Emma Giraud, intern

SCIENTIFIC SUPPORT FROM INRA

Marie-Christine Champomier-Verges, Ecosystems Pole, research director of the Food Microbial Ecology FME group

Joël Doré, scientific director of MetaGenoPolis and the Micalis Ecosystems Pole

Marion Leclerc, Ecosystems Pole, research director of the Phylogeny and Physiology of the Human Microbiome (PhylHom) group

Muriel Thomas, Ecosystems Pole, research director of the Phylogeny and Physiology of the Human Microbiome (PhylHom) group

Mathieu Almeida, MetaGenoPolis

Françoise Rul, Risks Poles / Peptides and Bacterial Communication

Harry Sokol, Doctor at Saint Antoine hospital and research director of the Microbiota and Immunity group, UMR 1319 - Micalis and AVENIR team, Inserm U1157 / UMR 7203

Martine Champ, expert in dietary fibres



THE PARTNERS

■ IN PARTNERSHIP WITH



It was only natural that Inra became the exhibition's main scientific partner, working closely with the team of museum specialists to make new developments in the field of gut microbiota accessible to the widest public possible.

For half a century, researchers at the National Institute for Agronomic Research have been exploring the micro-world inside organisms and foods. They were among the first to have revealed the immense diversity of species inside our intestines and the billions of bacteria in the gigantic ecosystem with which we live in symbiosis: our gut microbiota.

INRA is one of the world leaders in this field of research, particularly since the first massive sequencing of human gut microbiota genomes in March 2010, in the framework of the MetaHIT project. Microbiota is being studied in several of Inra's laboratories: its makeup, its genes (much more numerous than ours), its interactions with our organism, its dysfunctions and their consequences, etc.

In line with this research focus, Inra has been the exhibition's scientific partner, working closely with the team of specialists at the museum to make new knowledge of gut microbiota as accessible as possible to visitors. www.inra.fr

■ WITH THE COLLABORATION OF



Afa Crohn RCH is the only non-profit national organisation to be recognized of public service to focus on the fight against such inflammatory bowel diseases (IBD) as Crohn's disease and ulcerative colitis (UC). The following are Afa Crohn RCH's missions:

- Healing: the organisation initiates and finances fundamental and clinical research programmes. It is a key player in research and development assistance, which funds original projects selected by its Scientific Committee.
- Representing patients and their relatives, by bringing their voices to political and health decision-makers.
- Acting, through its 22 regional delegations, by supporting, accompanying and informing patients and their relatives.
- Informing, the organisation provides the latest proven information on the diseases, their treatments, rights and nutrition on its website and in brochures. The afa MICI app provides further information and gives practical advice, from locating the nearest toilets to finding professionals who can help patients in their daily life. www.afa.asso.fr



Assistance publique - Hôpitaux de Paris, AP-HP and Fondation de l'AP-HP pour la Recherche

AP-HP is a European-scale university hospital system. With its 39 hospitals, it provides care to 10 million people a year: doctor visits, emergency room care, planned hospitalisation or home care. AP-HP proudly provides these public health services to all, 24/7. It is the top employer in Ile de-France, with 100,000 employees, including doctors, research scientists, administrative and maintenance staff. www.aphp.fr

Microbiota research is one of the most promising areas of medical research when it comes to developing new treatments for many diseases. At AP-HP, several groups in a wide range of specialties work simultaneously on the microbiota: paediatrics, psychiatry, oncology, metabolism, nutrition, neurology, etc. To accelerate their discoveries, the AP-HP Foundation for Research has made research on microbiota one of the areas of priority support. Find out more at : <http://fondationrechercheaphp.fr>

■ WITH SUPPORT FROM



Biocodex Microbiota Institute

The Biocodex Microbiota Institute was created by Biocodex, an independent international pharmaceutical company. Given the importance of the microbiota for public health, and the prospects of new treatments for a variety of digestive and non-digestive pathologies, Biocodex regards it as a social responsibility to contribute to the dissemination of microbiota-related information to patients and health professionals alike.

The Biocodex Microbiota Institute produces and disseminates a network of scientifically rigorous microbiota data in the framework of a multi-channel strategy. An internet site (biocodexmicrobiotainstitute.com), newsletters and thematic dossiers present crucial advances in the field, with the goal of providing the keys for a better understanding of the connection between microbiota and human health.

Created in the 1950s, Biocodex initially focused on the sale in France of the probiotic yeast, *Saccharomyces boulardii* CNCM I-745, under the brand name Ultra-Levure®. It subsequently developed internationally and now has subsidiaries in 17 countries and partners in more than 100.



Danone Nutricia Research

Danone is a partner of this exhibition through its research centre, Danone Research. Located in Palaiseau, it is dedicated to international research for its dairy and plant-based products and waters.

The purpose for Danone is to foster the dissemination of scientific advances in the fields of food and human physiology to as wide a public as possible and to encourage people to think about this “new self”, gut microbiota whose impact on our health is now widely recognised.

This initiative is in line with Danone’s ongoing commitment to advance science in this field. “This concern is in the DNA of Danone since the start,” explains Sylvie Binda. “Isaac Carasso, the founder of Danone, already had this intuition when he made his first yoghurts in 1919 to protect the microbiota of children suffering from intestinal infections.”

A better understanding of the contents of our plates but also our lifestyle and its impact on our gut flora are at the heart of the research conducted at Danone Research. This exhibition is a unique opportunity to bring current scientific advances to a wide public and provide them with an understanding of how food, conceived for human beings and their billions of bacteria, could be the best possible medication.



Fondation Roquette
pour la santé

Roquette Foundation for Health

Under the aegis of Fondation de France, the Roquette Foundation for Health supports innovative or educational programmes in the fields of food and nutrition.

It was founded in November 2017 by Roquette, a global leader in plant-based ingredients and pioneer in new plant-based proteins, to reinforce the group’s commitment to sustainable human and economic development that meets current and future social challenges. It accompanies and supports a variety of educational programmes on food and studies on its impact on diseases and health.

This exhibition coincides with the educational dimension of the Foundation’s work toward the broadest public possible. The executive board of the foundation was won over by the way in which the exhibition uses a playful tone to bring home the role of the gut and the importance of gut microbiota, while providing easy to apply tips for everyday life.

■ WITH ASSISTANCE FROM



Seventure Partners

Seventure is one of the European leaders in venture capital, with investments in innovative companies that display strong growth potential. With an expertise in Life Sciences, particularly in the field of microbiome where its leadership is international recognised, Seventure is also renowned for its pioneering, visionary investment policy. Active since 2001 in biotech and medtech, Seventure has been supporting the health, nutrition and foodtech sectors since 2005 and, since 2008, it has invested in the many microbiome-related applications.



NIPIB (New Educational Imaging of the Invisible)

NIPIB is a cooperative project by ITOP education –publisher of French education software– working with educational and life sciences experts. It is an online platform providing access to high-quality high-resolution virtual microscope slides, primarily used by secondary school science teachers and their students. This virtual microscopy database, made available to the scientific staff of Universcience, is published by ITOP éducation in the framework of its creative innovation and R&D strategies.

■ AND THE PARTICIPATION OF

PORCHER

YOUR NOTES

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#ExpoMicrobiote