

de las Microbiotas





### **Study results by country**

Brazil China Mexico **Portugal** — Spain **United States France** 







### **Methods**



#### Methods

This international survey was conducted online in **7 countries** from March 21st - April 7th 2023. **6,500 people** were interviewed in the 7 countries, among representative samples of the population aged 18 y.o. and more in each country:

- United States of America (n=1000)
- Brazil (n=1000)
- Mexico (n=1000)
- France (n=1000)
- Portugal (n=500)
- Spain (n=1000)
- China (n=1000)

An automated selection from the Ipsos Panel ensured representative samples in each country (gender, age, employment status and country region) based on quota method.

#### Comments



= Average response for all 7 countries.

(n=6500)

Significant differences have been calculated vs All countries

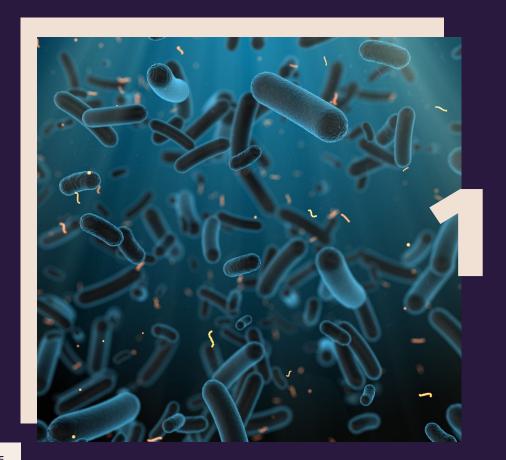


- Focus on detailed results according to different criteria such as gender or age.
- Significant differences vs country average superior
- Significant differences vs country average inferior
  - = These indications show results that are statistically different (above or below) the average for all respondents.
  - All results are presented in %.









A matter of "words": a very poor understanding of the terms used to talk about the microbiota.



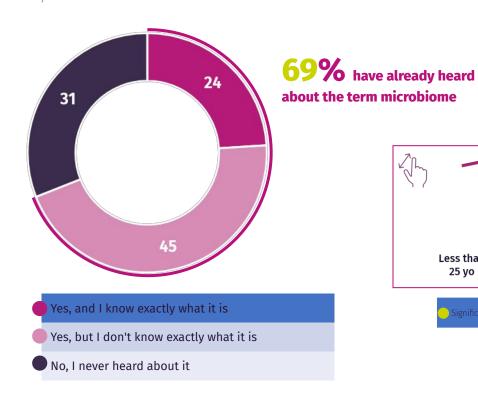




#### Although 2/3 of people have already heard about microbiome, only 1/4 know precisely what it is.

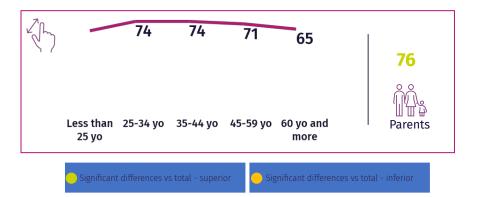


Question 2. Have you ever heard of the "microbiome"? Base: All respondents





64%





### Those who know the word "microbiome", associate spontaneously the term with intestinal, bacteria, microorganisms and digest.



Question 1. When you hear the word "microbiome", what information, words and feelings come to mind? Base: People who have heard of the "microbiome" n=701



Precision: The keyword cloud is a visual representation of the most used keywords by respondents to this open question. The more words are displayed, the more the term was cited.



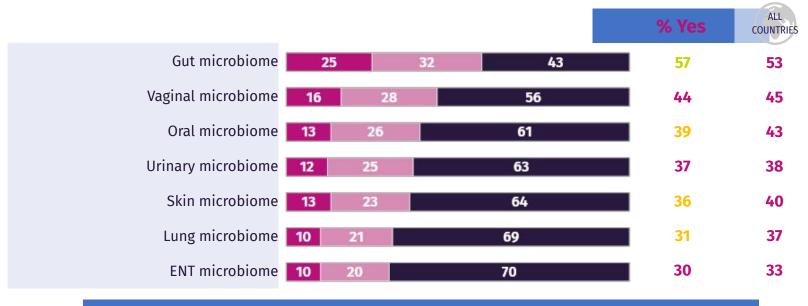




### Little is known precisely about the different types of microbiomes, but Spanish seem to know more about the gut microbiome than the other countries.



Question 3. And more specifically, have you ever heard of the following terms? Base: All respondents



Yes, and I know exactly what it is Yes, but I don't know exactly what it is Never heard about it



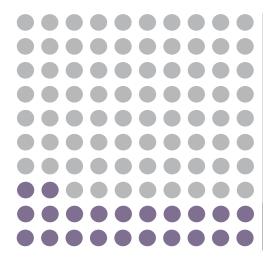




### Little is known precisely about the diversity of the microbiome, even more for respondents over 60 yo.



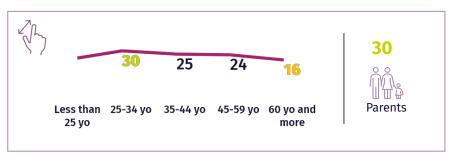
Question 3. And more specifically, have you ever heard of the following terms? Base: All respondents



22% have already heard of each microbiome: Gut, vaginal, skin, lung, urinary, Oral and ENT microbiome



26%



But only 5% know <u>precisely</u> all of them



5%



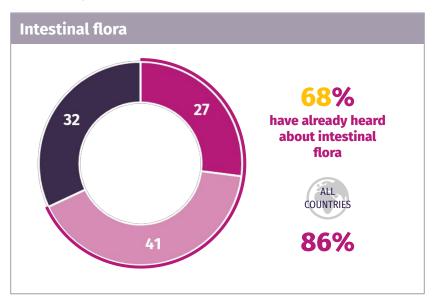
Significant differences vs total - inferior

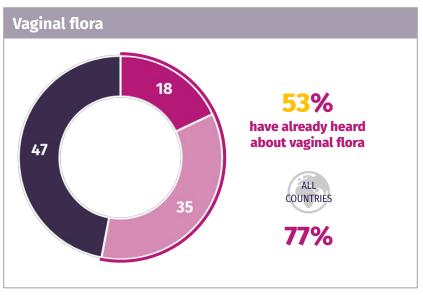


# The term 'flora' doesn't seem to be better known than 'microbiome', and this level of knowledge is much lower than in the other countries.



Question 2bis. And have you ever heard of these terms? Base: All respondents









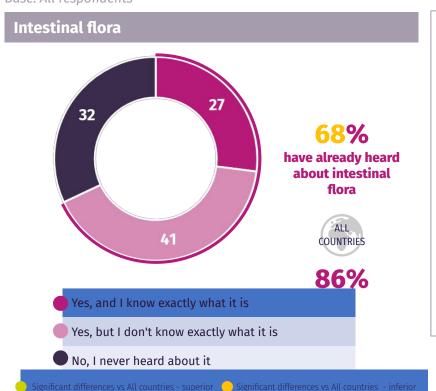




### The term 'intestinal flora' is equally known in all age groups.



Question 2bis. And have you ever heard of these terms? Base: All respondents





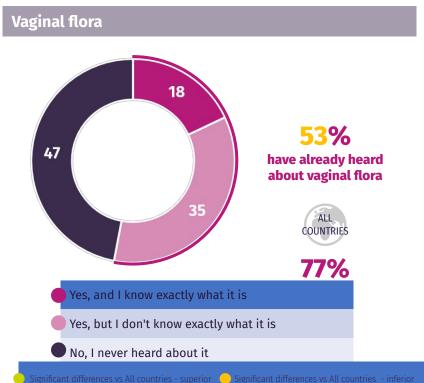
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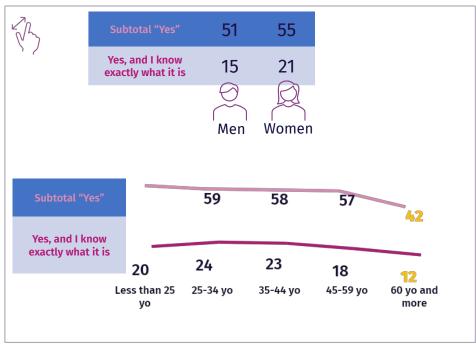


### People over 60 yo are the least aware of the vaginal flora but the results are particularly worrying for women: only 1 in 5 women know what the vaginal flora is exactly.



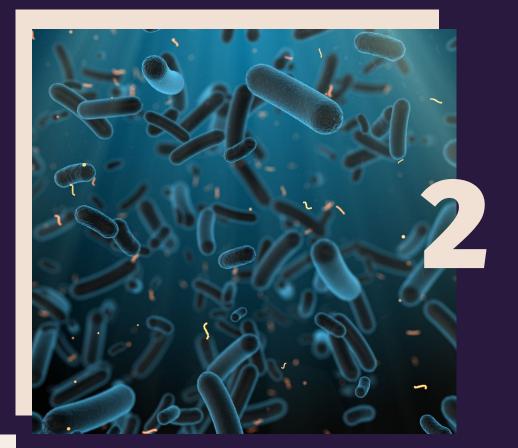
Question 2bis. And have you ever heard of these terms? Base: All respondents





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**Although knowledge** about the causes and consequences of an imbalanced microbiome is poor, some essential information are known by most people



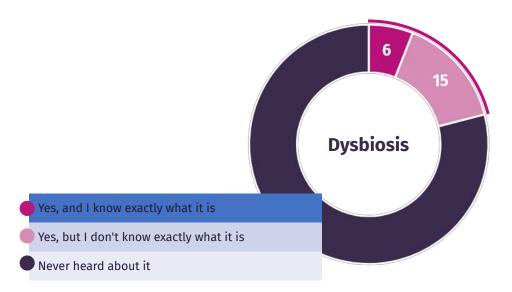




#### Dysbiosis is far from being a common term for people: only 1 Spanish in 5 have heard of it.



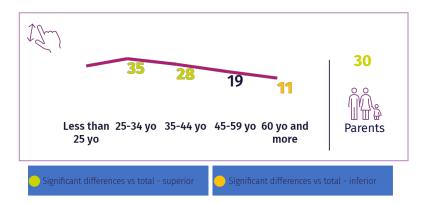
Question 3. And more specifically, have you ever heard of the following terms? Base: All respondents



21% have already heard about the term 'dysbiosis'



**28%** 



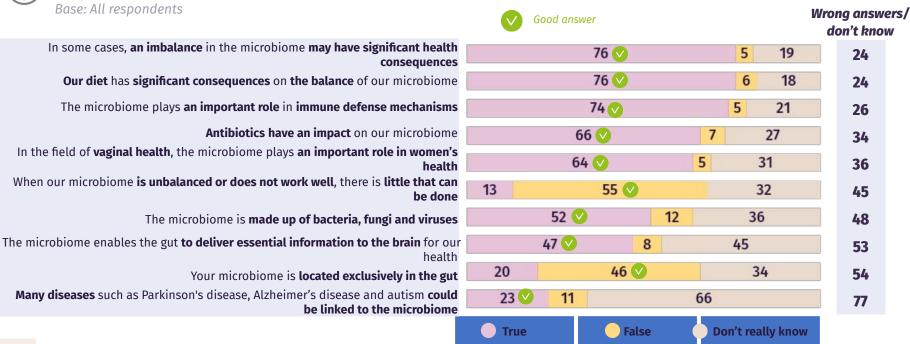




# Information about the microbiome is poor, but most people know that its imbalance is dangerous for health, that our diet can influence it, and that it plays an essential role in the immune system.



Question 4. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.











### Spanish are slightly less likely than others to know that the microbiome enables the gut to deliver essential information to the brain.

Question 4. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know. / Base: All respondents

#### % good answe

r	Total	
In some cases, <b>an imbalance</b> in the microbiome <b>may have significant health consequences</b>	76	75
Our diet has significant consequences on the balance of our microbiome	76	74
The microbiome plays an important role in immune defense mechanisms	74	72
Antibiotics have an impact on our microbiome	66	66
In the field of <b>vaginal health</b> , the microbiome plays <b>an important role in women's health</b>	64	66
When our microbiome <b>is unbalanced or does not work well</b> , there is <b>little that can be done</b>	55	53
The microbiome is made up of bacteria, fungi and viruses	52	54
The microbiome enables the gut <b>to deliver essential information to the brain</b> for our health	47	53
Your microbiome is located exclusively in the gut	46	45
<b>Many diseases</b> such as Parkinson's disease, Alzheimer's disease and autism could be linked to the microbiome	23	25





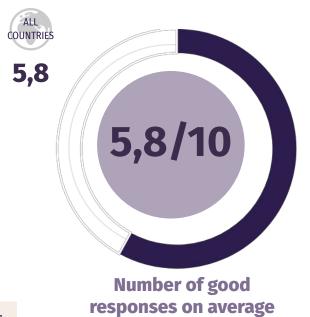


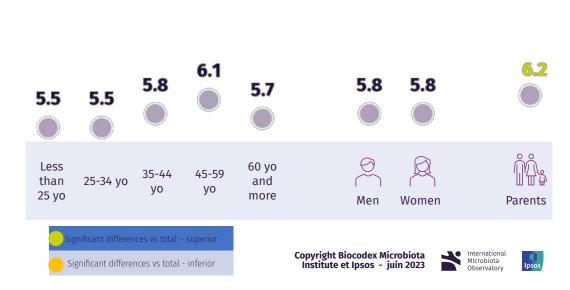
### Parents seem to have better knowledge about microbiome.

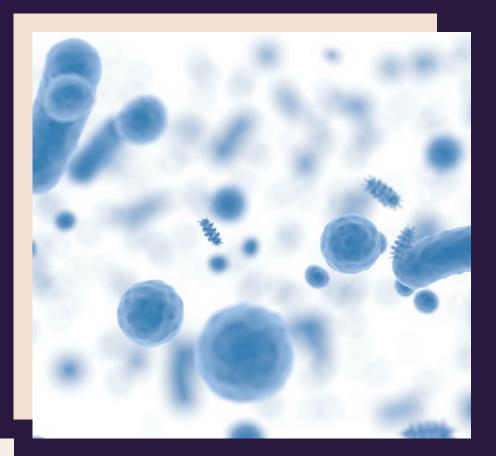


Question 4. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.

Base: All respondents







#### <u>Text displayed to respondents:</u>

The microbiome (or microbial flora) is a group of microorganisms such as bacteria, viruses, fungi and archaea, which live in symbiosis in our body, mainly in our digestive tract but also on the skin, in the lungs, ears, mouth and vagina.

The microbiome has many consequences for our health because it fulfils essential functions such as digesting foods, synthesis of vitamins and stimulating our immune system.

A balanced microbiome is also important in preventing certain diseases such as allergies, obesity and chronic inflammatory bowel diseases.

Recent studies also suggest that the microbiome can have an impact on our mental health and behavior, influencing our mood, cognition and motivation.







A strong lack of awareness of the behaviors and the solutions to be implemented for maintaining a balanced microbiome





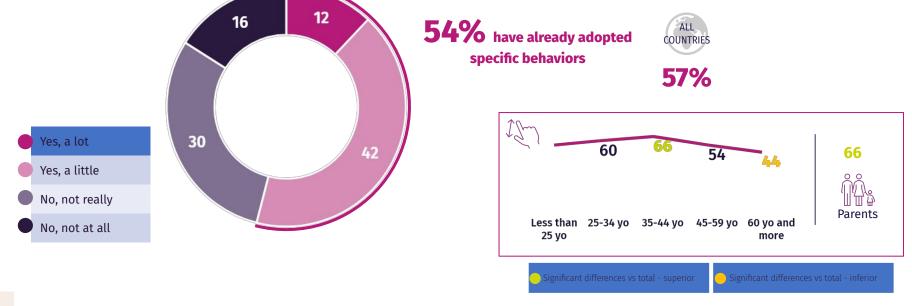


### A small majority have adopted specific behaviors to keep their microbiome balanced and functioning as smoothly as possible.



Question 10. And in your daily life, have you adopted specific behaviors to keep your microbiome as balanced and functioning as smoothly as possible?

Base: All respondents





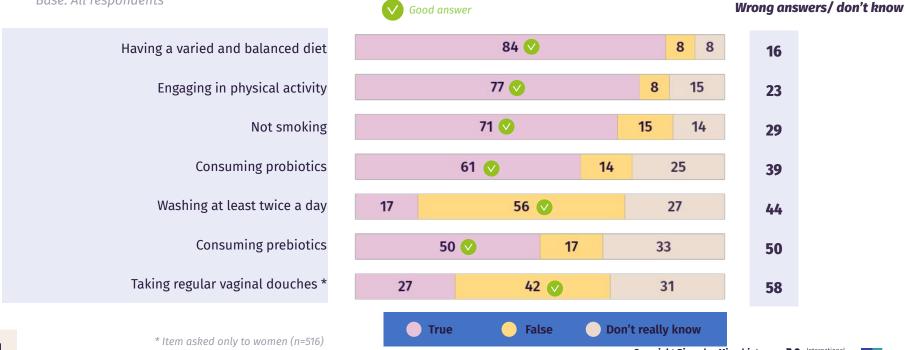


### Except the « standard » healthy behaviors, those related to hygiene and prebiotics are not well identified.



Question 11. Based on what you know, among the following behaviors, which ones have a positive effect on the balance and proper

functioning of your microbiome? Base: All respondents











### On a positive side, more Spanish seem aware that washing twice a day can be harmful to their microbiome balance.

Question 11. Based on what you know, among the following behaviors, which ones have a positive effect on the balance and proper functioning of your microbiome? Base: All respondents

% good answer

	Total	
Having a varied and balanced diet	84	84
Engaging in physical activity	77	76
Not smoking	71	72
Consuming probiotics	61	62
Washing at least twice a day	56	35
Consuming prebiotics	50	51
Taking regular vaginal douches *	42	42





<sup>\*</sup> Item asked only to women (n=516)





### Women seem to stand out positively compared to men.



Question 11. Based on what you know, among the following behaviors, which ones have a positive effect on the balance and proper functioning of your microbiome ? Base: All respondents

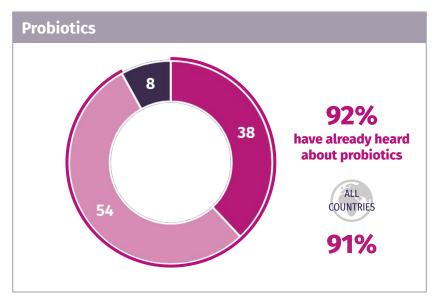


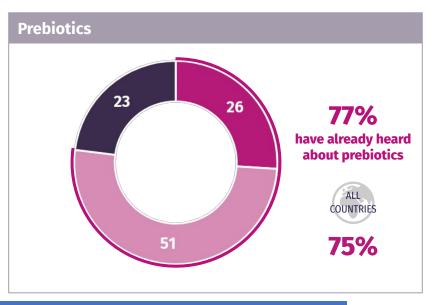


# Probiotics seem more familiar to people compared to prebiotics, but the majority have little or no idea what they precisely are.



Question 2bis. And have you ever heard of these terms? Base: All respondents





Yes, and I know exactly what it is

Yes, but I don't know exactly what it is

No. I never heard about it





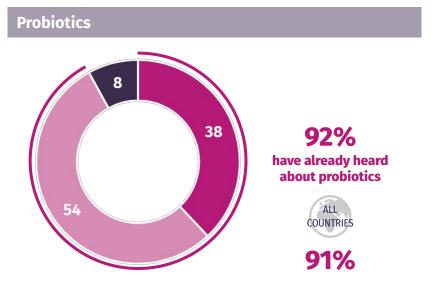


### Once again, the term 'probiotics' seem to be known equally by all age groups.

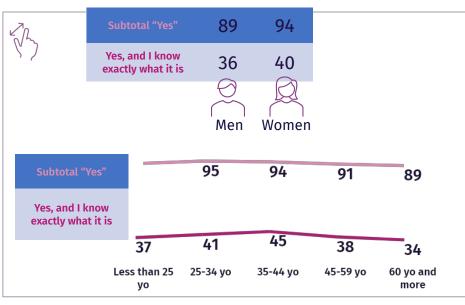
Yes, but I don't know exactly what it is



Question 2bis. And have you ever heard of these terms? Base: All respondents



Yes, and I know exactly what it is







No, I never heard about it

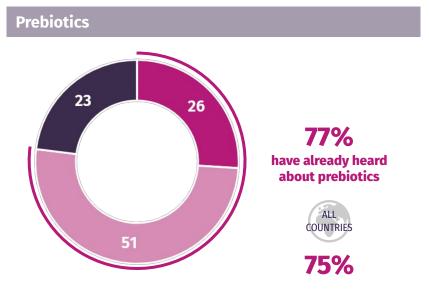


### People aged 35-44 yo appear to know more precisely about prebiotics.

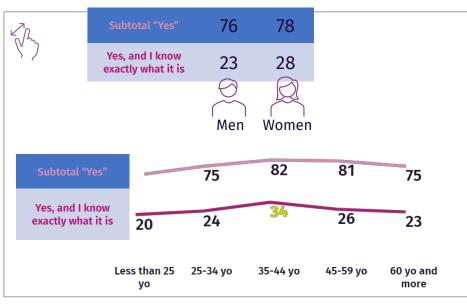
Yes, but I don't know exactly what it is



Question 2bis. And have you ever heard of these terms? Base: All respondents



Yes, and I know exactly what it is





No, I never heard about it



While many people report experiencing wellness problems that may be linked to microbiota imbalances

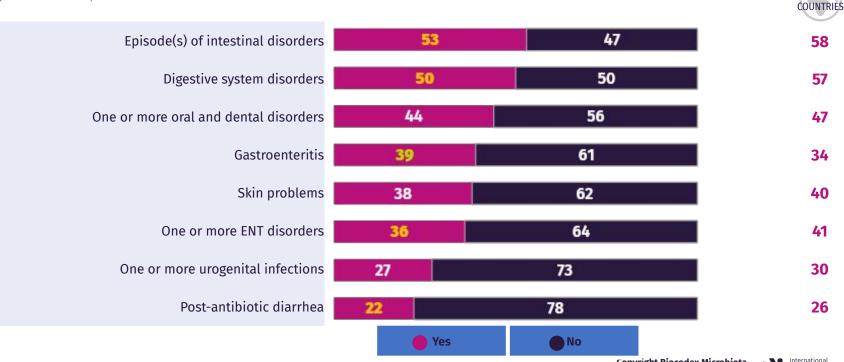




### Spanish seem to have experienced slightly fewer health problems than the other countries, although more than half of them have suffered episodes of intestinal or digestive problems.



Question 11a. Over the past 5 years, have you ever experienced the following problems? Base: All respondents









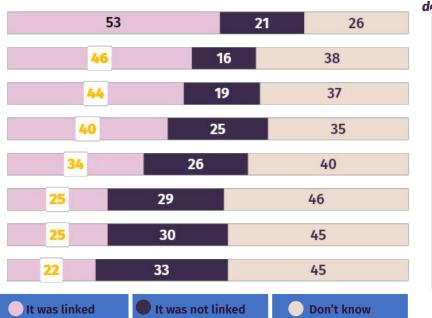
ALL

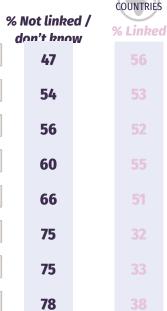
### They are also less likely to link the health problems they experienced with their microbiome.



Question 11b. And do you think this or these problems are linked to your microbiome? Base: People who have experienced these problems











Health professionals are essential in teaching patients to become actors of their own microbiota health

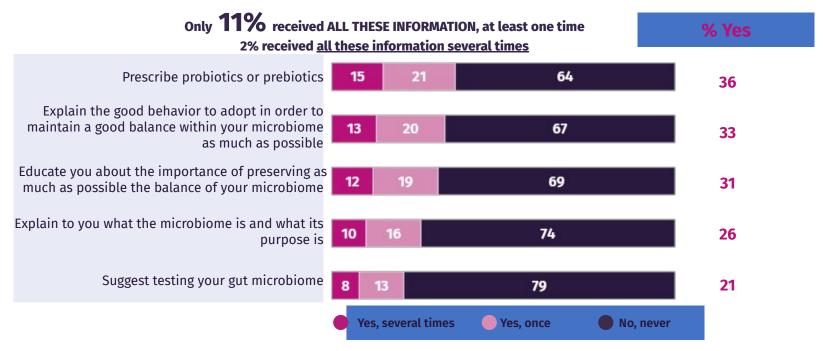


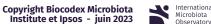


# On the subject of microbiome, a very low proportion of health professionals take action with their patients.



Question 5. Have any of the healthcare professionals you have seen ever done any of the following? Base: All respondents











### Compared to the other countries, Spanish receive very little prescription and advice about their microbiome from their HCPs.

Question 5. Have any of the healthcare professionals you have seen ever done any of the following? Base: All respondents

% Yes		Total	
	% Received ALL THESE INFORMATION, at least one time	11	19
	% Received ALL THESE INFORMATION, several times	2	4
	Prescribe probiotics or prebiotics	36	46
	Explain the good behavior to adopt in order to maintain a good balance within your microbiome as much as possible	33	44
	Educate you about the importance of preserving as much as possible the balance of your microbiome	31	42
	Explain to you what the microbiome is and what its purpose is	26	37
	Suggest testing your gut microbiome	21	30







## Worryingly, people aged over 60 yo have the least received information from their HCPs.



Question 5. Have any of the healthcare professionals you have seen ever done any of the following? Base: All respondents

% Yes	Total	Less than 25 yo	25-34 yo	35-44 yo	45-59 yo	60 yo and more	Men	Women	Parents
Prescribe probiotics or prebiotics	n=1000	n=67 <b>49</b>	n=148 <b>53</b>	n=191 <b>44</b>	n=284 <b>32</b>	n=310 <b>23</b>	n=484 <b>32</b>	n=516 <b>39</b>	n=333 <b>47</b>
Explain the good behavior to adopt in order to maintain a good balance within your microbiome as much as possible	33	44	47	45	29	21	35	32	48
Educate you about the importance of preserving as much as possible the balance of your microbiome		36	41	42	29	20	33	29	44
Explain to you what the microbiome is and what its purpose is	26	32	39	36	23	17	27	25	39
Suggest testing your gut microbiome	21	29	27	26	21	12	22	19	33

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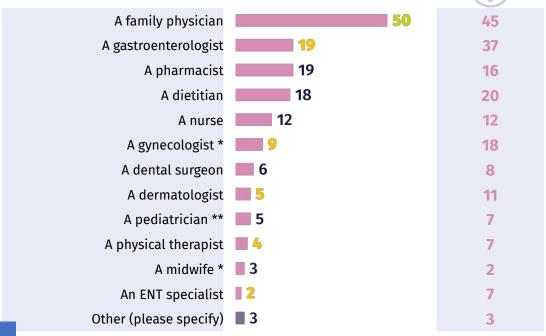




### Family physicians are the main HCPs who provided information about microbiome. Gastroenterologists and pharmacists come next, but to a lesser extent.



Question 6. And which healthcare professionals provided you with these explanations? Base: People who have had an explanation from healthcare professionals (n=477)



COUNTRIES

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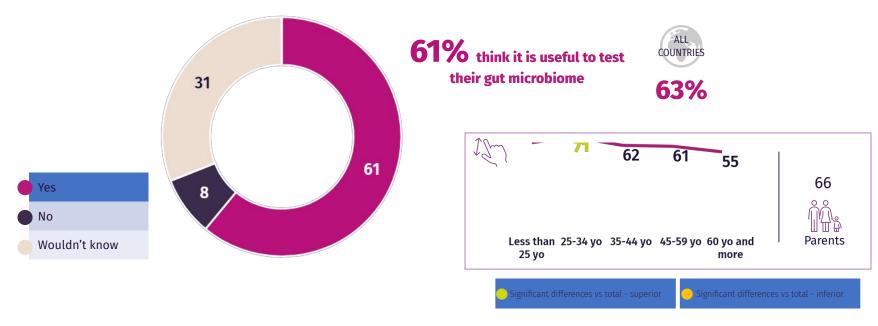




### 6 respondents in 10 think it would be useful to test their gut microbiome.



Question 5bis. In your case, do you think it is useful to test your gut microbiome? Base: All respondents







### While treated with antibiotics, few has received advice and information to protect their microbiome.



Question 7. The last time a doctor prescribed antibiotics, did they do the following? Base: All respondents

### Only 18% received ALL THESE INFORMATION from their HCPs

Tell you about any digestive disorders associated with taking antibiotics Give you advice on limiting the negative consequences of taking antibiotics on your microbiome as much as possible Tell you that taking antibiotics could have negative consequences on the balance of your microbiome









# Once again, people aged over 60 yo received less information and advice when prescribed antibiotics.

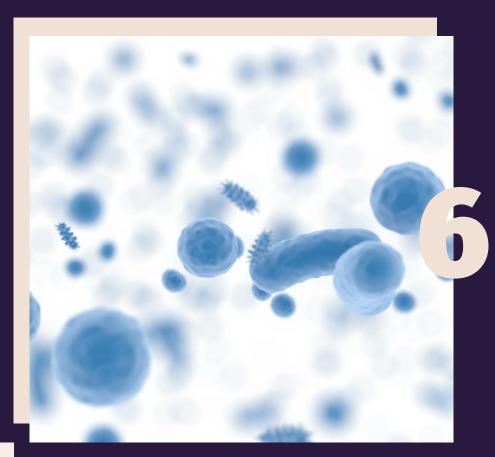


Question 7. The last time a doctor prescribed antibiotics, did they do the following? / Base: All respondents

% Yes	Total	Less than 25 yo	25-34 yo	35-44 yo	45-59 yo	60 yo and more	Parents
base	n=1000	n=67	n=148	n=191	n=284	n=310	n=333
% HAVE <u>RECEIVED ALL THESE INFORMATION</u> FROM THEIR HCPS	18	16	21	18	22	13	25
Tell you about any digestive disorders associated with taking antibiotics	36	43	41	38	41	28	43
Give you advice on limiting the negative consequences of taking antibiotics on your microbiome as much as possible	27	35	36	29	28	20	36
Tell you that taking antibiotics could have negative consequences on the balance of your microbiome	26	36	32	29	28	18	37

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# Focus on the vulvo-vaginal microbiome

In the next questions, we will discuss the vulvovaginal microbiome, also known as vaginal flora or vaginal microbiome.

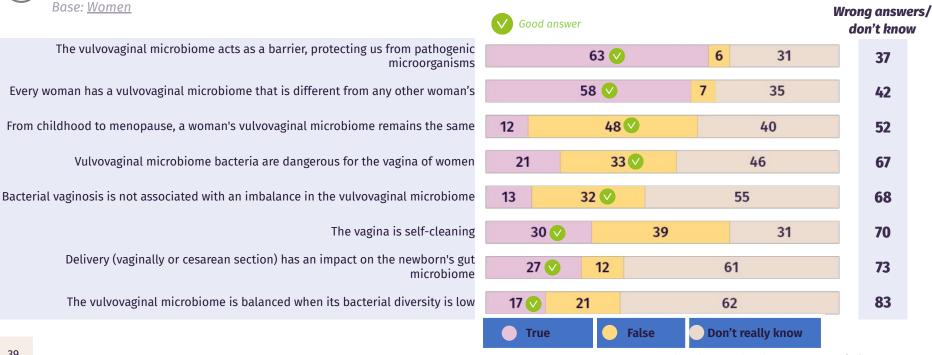




# When focusing on the vulvo-vaginal microbiome, knowledge appears limited.



Question 13. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.











# Spanish women are less aware than in the other countries that the vagina is self-cleaning and that its microbiome is balanced when its bacterial diversity is low.

Question 13. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.

Base: Women

% good answer		Total	
	The vulvovaginal microbiome acts as a barrier, protecting us from pathogenic microorganisms	63	67
	Every woman has a vulvovaginal microbiome that is different from any other woman's	58	60
	From childhood to menopause, a woman's vulvovaginal microbiome remains the same	48	52
	Vulvovaginal microbiome bacteria are dangerous for the vagina of women	33	37
	Bacterial vaginosis is not associated with an imbalance in the vulvovaginal microbiome	32	35
	The vagina is self-cleaning	30	52
	Delivery (vaginally or cesarean section) has an impact on the newborn's gut microbiome	27	30
	The vulvovaginal microbiome is balanced when its bacterial diversity is low	17	27





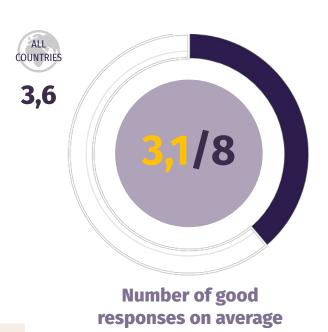


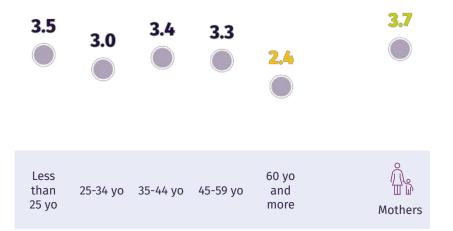
# While mothers seem to have better knowledge about the vulvo-vaginal microbiome, women over 60 yo are once again the least informed.



Base: Women

Question 13. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.













# Women over 60 yo know the least about vulvo-vaginal microbiome.

Question 13. For each of the following statements, tell us if you think it is TRUE or FALSE. If you are unsure about your answer, answer I do not really know.

Base: Women

% good answer	Total	Less than 25 yo	25-34 yo	35-44 yo	45-59 yo	60 yo and more
base	n=516	n=48	n=102	n=104	n=145	n=117
The vulvovaginal microbiome acts as a barrier, protecting us from pathogenic microorganisms	63	66	56	70	70	54
Every woman has a vulvovaginal microbiome that is different from any other woman's	58	63	55	63	62	49
From childhood to menopause, a woman's vulvovaginal microbiome remains the same	48	41	40	48	60	42
Vulvovaginal microbiome bacteria are dangerous for the vagina of women	33	40	37	36	30	27
Bacterial vaginosis is not associated with an imbalance in the vulvovaginal microbiome	32	43	31	34	36	21
The vagina is self-cleaning	30	43	32	34	28	21
Delivery (vaginally or cesarean section) has an impact on the newborn's gut microbiome	27	28	29	34	29	16
The vulvovaginal microbiome is balanced when its bacterial diversity is low	17	22	19	21	18	10

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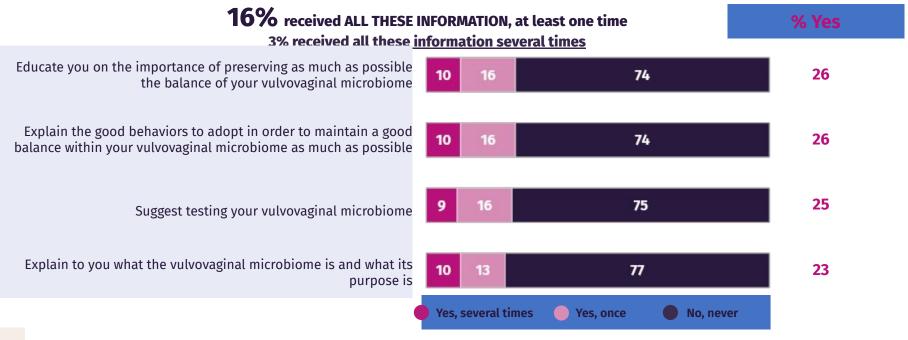




# Very few women have received any information or advice from their HCPs about the microbiome.



Question 14. Has the healthcare professional following your gynecological health talked to you about the following? Base: Women









## Spanish women have received significantly less information from their HCPs than women in the other countries.

Question 14. Has the healthcare professional following your gynecological health talked to you about the following? Base: Women

#### % Yes

	Total	
% Have received ALL THESE INFORMATION, least one ti	16	22
Educate you on the importance of preservi as much as possible the balance of yo vulvovaginal microbion	our 26	40
Explain the good behaviors to adopt in ord to maintain a good balance within yo vulvovaginal microbiome as much as possil	our 26	42
Suggest testing your vulvovaginal microbion	me <b>25</b>	31
Explain to you what the vulvovagin microbiome is and what its purpose	/ <b>/</b>	35







### People over 60 yo are also the ones who receive the least information and advice from their HCPs.



Question 14. Has the healthcare professional following your gynecological health talked to you about the following? Base: Women

% Yes	Total	Less than 25 yo n=48	25-34 yo	35-44 yo	<b>45-59 yo</b>	60 yo and more n=117
% Have received ALL THE INFORMATION, at least one time	16	18	21	22	14	6
Educate you on the importance of preserving as much as possible the balance of your vulvovaginal microbiome	26	35	36	27	25	14
Explain the good behaviors to adopt in order to maintain a good balance within your vulvovaginal microbiome as much as possible	26	36	36	27	24	14
Suggest testing your vulvovaginal microbiome	25	30	33	30	23	12
Explain to you what the vulvovaginal microbiome is and what its purpose is		27	32	27	22	12



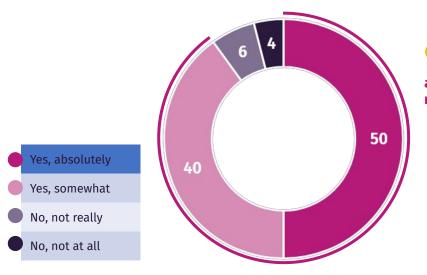


# Most of women would like to have more information about the importance of the vulvo-vaginal microbiome and its impact on health.



Question 15. And would you like the healthcare professional monitoring your gynecological health to tell you more about the importance of your vulvovaginal microbiome and its impact on your health?

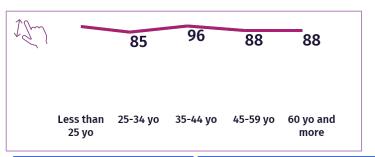
Base: Women



90% would like to have more information about the importance of the vulvovaginal microbiome and its impact on health



86%



Significant differences vs total - superior

Significant differences vs total - inferior







# In detail, and except the cotton underwear, a moderate proportion of women adopted specific behaviors to protect the health of their vulvo-vaginal microbiome.



Question 16. In your daily life, do you regularly adopt the following behaviors? Base: Women









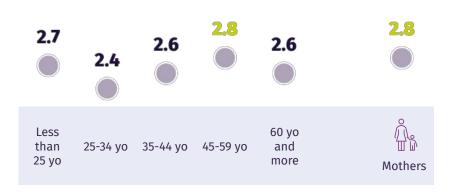
# Mothers are more likely to adopt appropriate behaviors for their vulvo-vaginal microbiome.



Question 16. In your daily life, do you regularly adopt the following behaviors? Base: Women



Number of appropriate behaviors adopted on average













# But in detail, there are no real differences related to beheviour between age groups



Question 16. In your daily life, do you regularly adopt the following behaviors? Base: Women

% Appr	opriate behavior		Total	Less than 25 yo	25-34 yo	35-44 yo	45-59 yo	60 yo and more
		base	n=516	n=48	n=102	n=104	n=145	n=117
	Wear cotton under	wear	83	89	71	85	86	84
	Take vaginal dou	ches	64	69	63	52	65	71
	Using a soap-free clear solu	sing ition	50	51	41	55	55	45
	Sleep without under	wear	33	30	34	29	36	32
	Take probiotics and/or prebi (either orally or vagin		33	29	33	40	34	27



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# **Main results**



### **Learnings on Spanish results**

Spain	

Awareness of the microbiome & its diversity				
Know exactly what is « microbiome »	24%			
Subtotal « Aware »	69%			
Subtotal Aware of the gut microbiome	57%			
Subtotal Aware of all microbiome				

Level of knowledge around the microbiota	
Mean of good answers	5,8/10

Level of knowledge around the solutions which can maintain the microbiota balanced					
Know exactly what are probiotics	38%				
Know exactly what are prebiotics	26%				

Adoption and identification of appropriate behaviors to maintain a balanced microbiota				
Have adopted specific behaviors	54%			
Number of behaviors identified in order to maintain the microbiota	<b>4,2</b> /7			

Level of information provided by healthcare professionals	
Received at least one piece of information at least once	47%

#### **Key learnings**

Spanish have little knowledge of the microbiome and the diversity of the microbiome. This knowledge is essentially driven by the gut microbiome. "Gut flora" would be a more familiar term for them.

In terms of knowledge, they have a very moderate knowledge of the composition, the functioning, the role of the microbiota and the consequences when it's unbalanced.

Compared to French and Portuguese, Spanish are more numerous to know probiotics and prebiotics. But this awareness remains very moderate. They already heard about it but do not know precisely what it is.

However, they are slightly better at identifying the behaviors to adopt, without necessarily applying them.

In terms of sources of information, less than half had received information from their healthcare professionals.







# **ANNEXES**



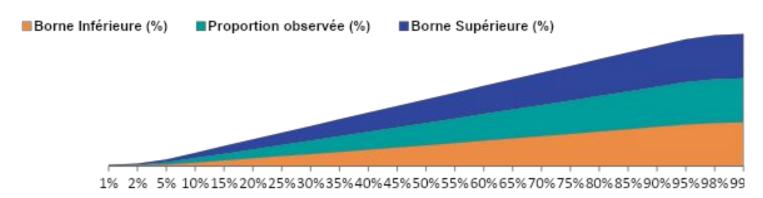
# FIABILITÉ DES RÉSULTATS

#### Feuille de calcul

#### En l'occurrence s'agissant de cette étude :

Intervalle de confiance : 95%
Taille d'échantillon : 1000

#### Les proportions observées sont comprises entre :





### SURVEY OVERVIEW

### CAWI survey – Online panel



#### **SAMPLE**

- Target: Male/female 18 and more in each country
- Selection of the respondent : participant selection using quotas
- Sample representativeness: criteria and sources: gender, age, active/inactive status, regions



#### **DATA COLLECTION**

- Fieldwork dates: 21 march 10 April 2023
- Sample achieved: 6500 interviews (100 for each country except in Portugal n=500)
- Data collection : on line
- Loyalty program with points- based award system for panelists
- Response quality control methods: monitoring of participants' response behavior (identification of responses that are too quick or careless, e.g. ticked in a straight or zigzag line)
- Checking of IP and consistency of demographic data.



#### **DATA PROCESSING**

- · Weighted sample
- · Method used: Rim Weighting Method
- Weighting criteria: criteria and sources: gender, age, active/inactive status, regions

# SURVEY MATERIAL THE QUESTIONNAIRE



Questionnaire





# RELIABILITY OF RESULTS: SELF COMPLETION ONLINE SURVEYS IIS

To ensure the overall reliability of a survey, all possible error components must be taken into account. That is why Ipsos imposes strict controls and procedures at each stage of the survey process.

#### **UPSTREAM OF THE DATA COLLECTION**

- Sample: structure and representativeness
- Questionnaire: the questionnaire is worded by following an editing
  process with 12 compulsory standards. It is proofread and approved
  at a senior level and then sent to the client for final validation. The
  programming (or questionnaire script) is tested by at least 2
  people and validated.
- Data collection: the interviewers are trained in survey techniques through a dedicated training module prior to any participation in a survey. In addition, they receive or attend a detailed briefing at the start of each survey.

#### **DURING THE DATA COLLECTION**

 Sampling: Ipsos imposes very strict operating rules for its selection frame in order to maximize the random nature of the sample selection: random selection from telephone listings, quota method, etc.  Fieldwork monitoring: collection is monitored and checked (exclusive link, IP validation, panelists' behavior monitoring penetration, interview length, consistency of responses, participation rate, number of reminders, etc.)

#### DOWNSTREAM OF THE DATA COLLECTION

- The results are analyzed in accordance with the statistical analysis methods (confidence interval versus sample size, significance tests). The first results are systematically checked against the raw results from the data collection. The consistency of results is also checked (particularly the results observed versus comparison sources in our possession).
- In cases where sample weighting is used (margin calibration method), this is checked by the processing teams (DP) and then validated by the survey teams.





## **SURVEY OVERVIEW**

### Organization (CAWI survey - Online panel)



# ACTIVITIES CARRIED OUT OR COORDINATED BY IPSOS TEAMS IN FRANCE

- · Design and methodology
- · Validation of scripting
- Coordination and validation of translation
- Coordination of data collection
- Data processing
- Validation of the statistical analyses
- · Creation of survey report
- · Results presentation design
- Oral presentation Analyses



# ACTIVITIES CARRIED OUT BY IPSOS EXPERT LOCAL TEAMS

- Translation
- Scripting
- Sampling (IIS panel)
- Emailing
- Data collection
- Data Map





### **ABOUT IPSOS**

lpsos is the third largest market research company in the world, present in 90 markets and employing more than 18,000 people.

Our research professionals, analysts and scientists have built unique multi-specialist capabilities that provide powerful insights into the actions, opinions and motivations of citizens, consumers, patients, customers or employees. Our 75 business solutions are based on primary data coming from our surveys, social media monitoring, and qualitative or observational techniques.

"Game Changers" – our tagline – summarises our ambition to help our 5,000 clients to navigate more easily our deeply changing world.

Founded in France in 1975, Ipsos is listed on the Euronext Paris since July 1st, 1999. The company is part of the SBF 120 and the Mid-60 index and is eligible for the Deferred Settlement Service (SRD).

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### **GAME CHANGERS**

In our world of rapid change, the need for reliable information to make confident decisions has never been greater.

At Ipsos we believe our clients need more than a data supplier, they need a partner who can produce accurate and relevant information and turn it into actionable truth.

This is why our passionately curious experts not only provide the most precise measurement, but shape it to provide True Understanding of Society, Markets and People.

To do this we use the best of science, technology and know-how and apply the principles of security, simplicity, speed and substance to everything we do.

So that our clients can act faster, smarter and bolder. Ultimately, success comes down to a simple truth: You act better when you are sure.



