

### How does YOMOJI® ( *Saccharomyces boulardii* ) help to stop diarrhea ?

Causes of Diarrhea		Method of action
Bacteria	E.coli enterotoxigenic <sup>1</sup> E.coli enteroadherent <sup>1</sup> Shigella <sup>2</sup> Salmonella <sup>3</sup> Vibrio cholerae <sup>4</sup>	A, B, C, D
	Camphylobacter	B, D
Viral	Norovirus <sup>5</sup> Rotavirus <sup>5</sup> Adenovirus <sup>5</sup>	C, D, E
	Giardia lamblia <sup>6</sup> Entamoeba histolytica <sup>7</sup>	A, B, D

A) Anti-toxic  
YOMOJI® produces proteins which work to neutralize bacterial toxins <sup>5,9</sup>

B) Anti-microbial  
YOMOJI® adheres to pathogens, decreasing their binding to the intestinal wall <sup>5,5</sup>

C) Enzymatic activity  
YOMOJI® produces polyamines which lead to a reduction in viral-induced watery diarrhea <sup>9</sup>

D) Immune enhancement  
YOMOJI® prevents infection by stimulating the immune system along the GI lining by increasing the protective antibody IgA <sup>5,11</sup>

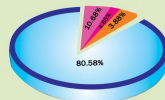
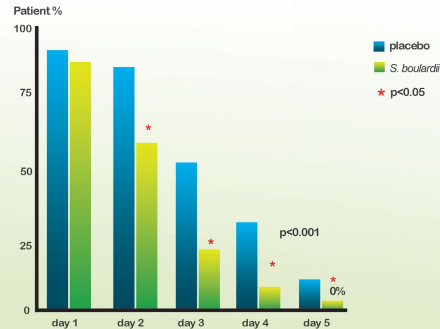
E) Anti-inflammatory  
YOMOJI® causes a decrease in pro-inflammatory cytokines <sup>12</sup>

### American Academy of Family Physicians recommendation for diarrhea <sup>14</sup>

Clinical recommendation	Evidence rating	Comments
Probiotics may reduce the duration and severity of all cause infectious diarrhea.	A	A large meta - analysis of all-cause infectious diarrhea included studies with viral diarrhea and traveler's diarrhea.
Probiotics may reduce the incidence of antibiotic diarrhea.	A	Most validated product is <i>Saccharomyces boulardii</i> .

A= consistent, good-quality patient-oriented evidence

### *Saccharomyces boulardii* in patients presenting with Watery infectious diarrhea caused by pathogens <sup>15</sup>



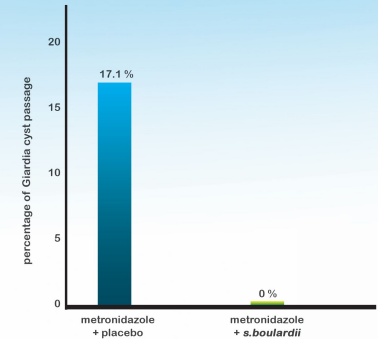
#### Pathogens identified:

- Rotavirus 80.58%
- Parasites : 10.68%
- Shigella flexneri : 4.85%
- Salmonella typhimurium : 3.88%

### Differences between yeast and the majority of bacterial probiotics <sup>13</sup>

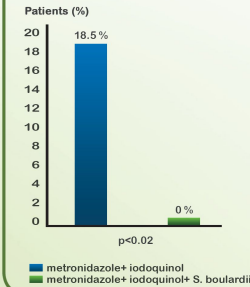
Characteristic	Bacteria	Yeast	YOMOJI® Advantage
Cell size	1 µm	10 µm	Ten times the surface area means greater protection of the intestinal wall and more pathogens adhere to the surface and are carried off in fecal stream
Growing conditions (PH)	6.5 – 7.5	4.5 – 6.5	<b>Survives in gastric acids</b> to reach the intestines and colon where needed
Type of microorganism	Microbe like cells	Eukaryote like cells	<b>No transfer of genetic material</b> between bacteria and yeast making yeast safer during antibiotic therapy
Resistance to antibiotics	No	Yes	<b>Not weakened by antibiotics</b> because yeast is naturally resistant
Immune system stimulation	Limited	Yes	Increases secretory IgA and enhances the intestinal mucosal immune response
Toxin receptor site inactivation	No	Yes	Stimulates brush border membrane enzymes, leading to cell maturation. Enhances absorption of nutrients
Neutralization of enterotoxins	No	Yes	As adjunctive therapy, reduces the recurrence of Clostridium difficile associated diarrhea by 50%. Releases a protease which digests the Toxin A molecule and it's receptor

### Effects of *Saccharomyces boulardii* in reducing probability of cyst passage after 2 weeks treatment of Giardiasis <sup>16</sup>

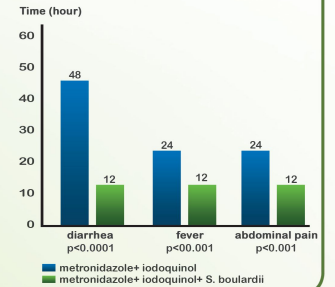


### Efficacy of *Saccharomyces boulardii* with antibiotics in acute Amoebiasis <sup>17</sup>

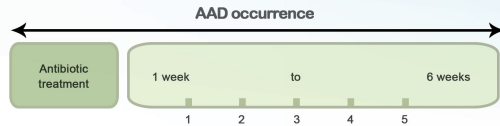
#### Presence of cysts in the stools after 4 weeks



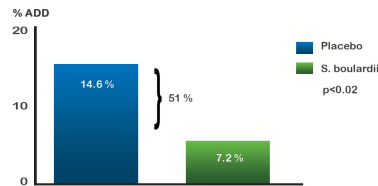
#### Resolution of clinical symptoms after 4 weeks



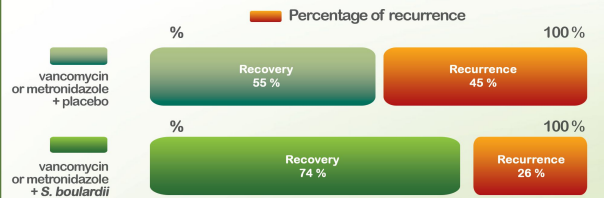
The time to onset of diarrhea varies up to a few weeks post - antibiotic treatment discontinuation <sup>18</sup>



Prevention of  $\beta$ -lactam-associated diarrhea by *Saccharomyces boulardii* compared with placebo <sup>19</sup>



*Saccharomyces boulardii* in combination with standard antibiotics for *Clostridium difficile* disease <sup>20</sup>



#### Description

1 hard capsule contains 250 mg freeze-dried yeast of *Saccharomyces boulardii* with at least  $10^{10}$  viable cells/g.

#### Indication

YOMOJI® is used for the treatment of symptoms of acute diarrhea, prevention and treatment of symptoms of traveler's diarrhea.

#### Some of the other indications include

Prevention of antibiotic associated diarrhea, increasing the eradication rate of H. Pylori, Irritable bowel syndrome, and inflammatory bowel disease.

#### Dosage and administration

Children over the age of 2 and adults take the following:

The treatment of diarrhea, 1 hard capsule 1-2 times daily for 1 week equivalent to 250 to 500 mg dry yeast of *Saccharomyces boulardii*.

For prevention of traveler's diarrhea, 1 hard capsule 1-2 times daily equivalent to 250 to 500 mg dry yeast of *Saccharomyces boulardii* starting 5 days before the departure.

In children under 6 years of age, the hard capsule can also be opened by pulling it apart and the contents stirred into liquid (room temperature) to make the preparation easier to take.

#### Caution

No adequate studies are available on the use of this drug in infants.

#### Interaction with other drugs

The concomitant administration of this drug and drugs against fungal diseases (antimycotic agents) may impair the effects of *Saccharomyces boulardii*.



#### References

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## Management of Diarrhea

Lyophilized yeast of *Saccharomyces boulardii* probiotic

