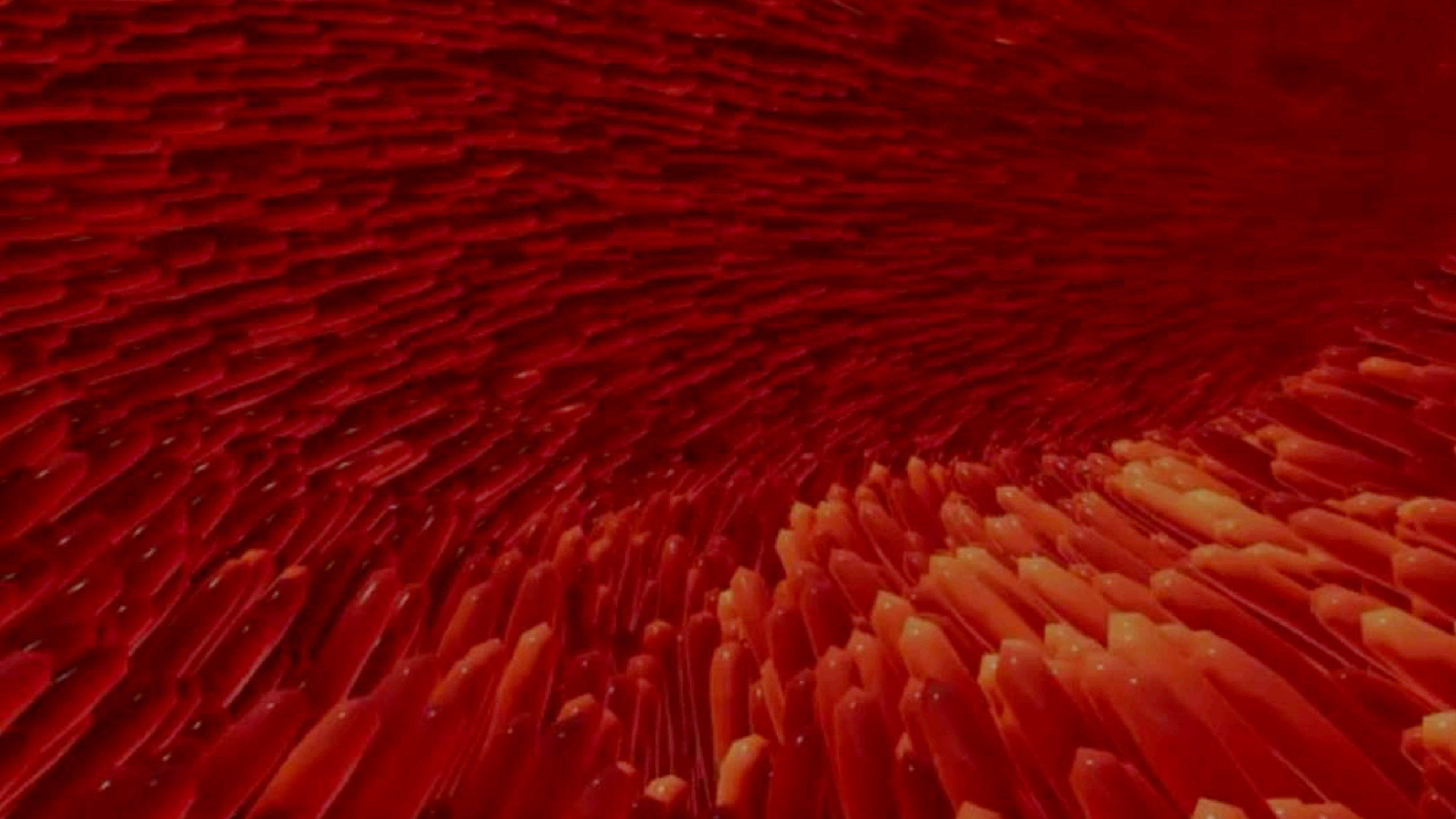
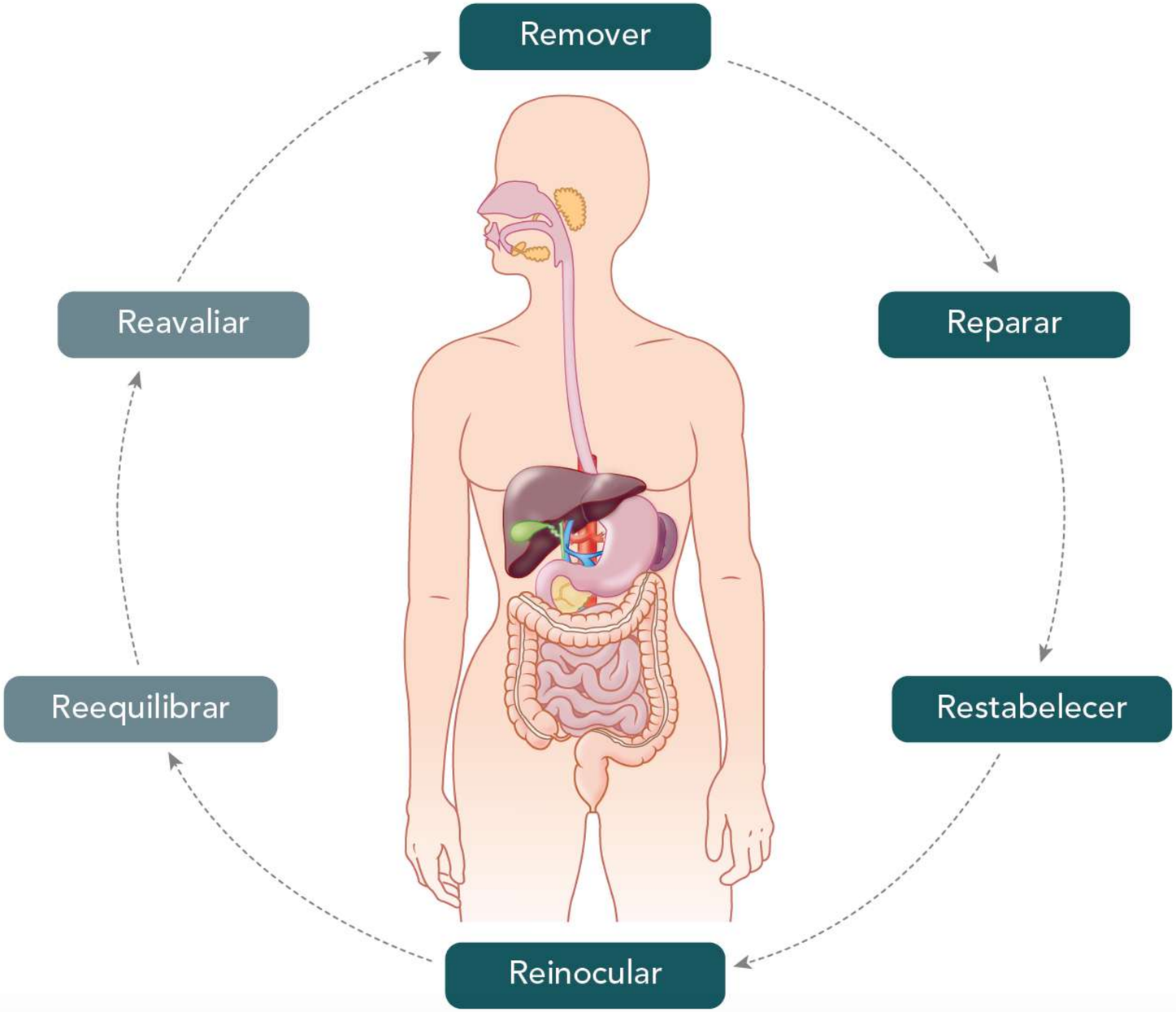


Editora Trato

Figura 4.3: Ações do Programa dos 6 Rs



PEREIRA, M.; GOUVEIA, F. **Modulação intestinal: fundamentos e estratégias práticas**. Brasília: Editora Trato, 2019.

INFORMAÇÃO NUTRICIONAL

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Glicina (mg)	2980	
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Sódio (mg)	9	1
Vitamina D (µg)	50	333
Vitamina C (mg)	1000	1000
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Não contém quantidades significativas de proteínas, açúcares totais, açúcares adicionados, gorduras totais, gorduras saturadas e gorduras trans.

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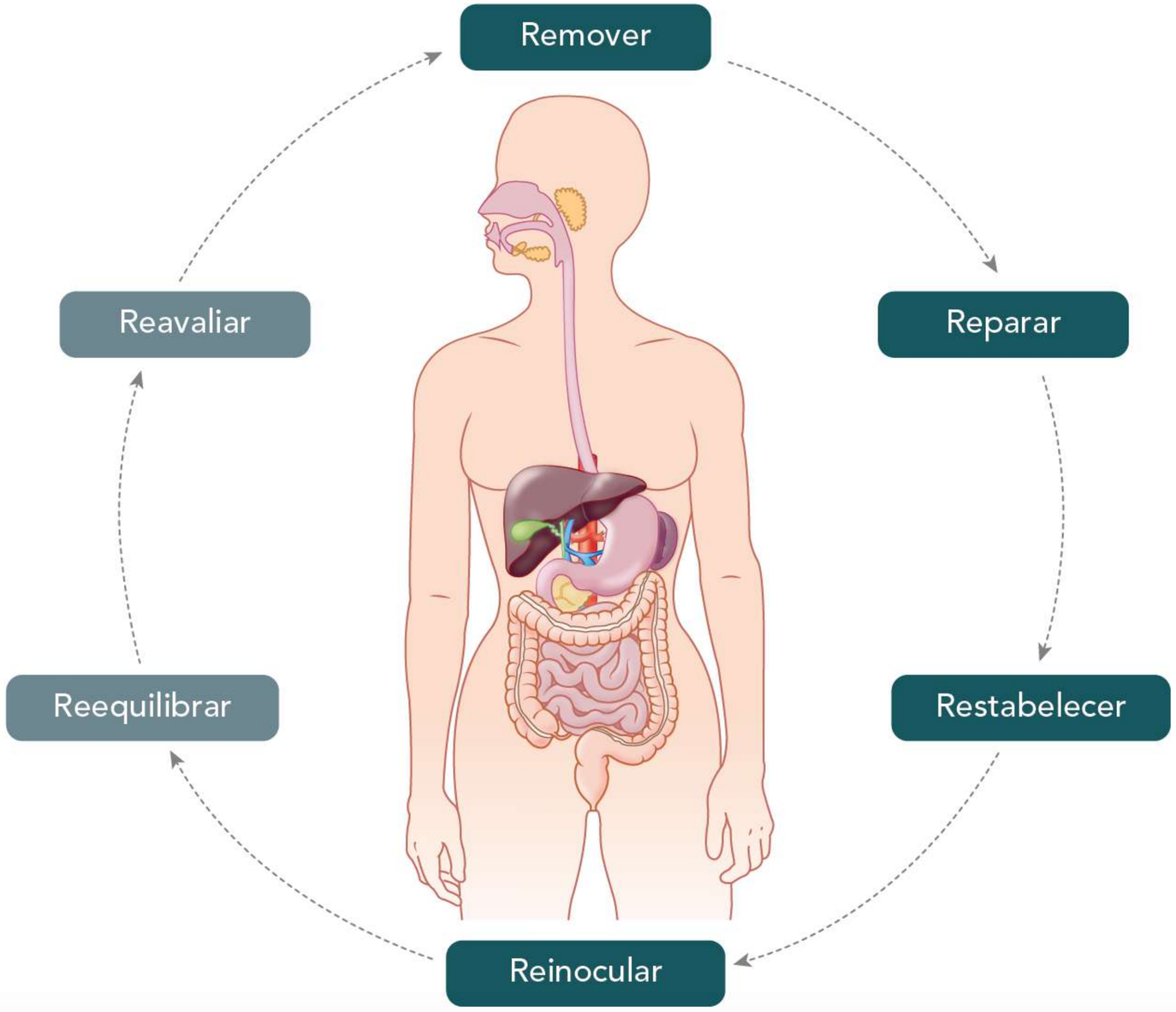
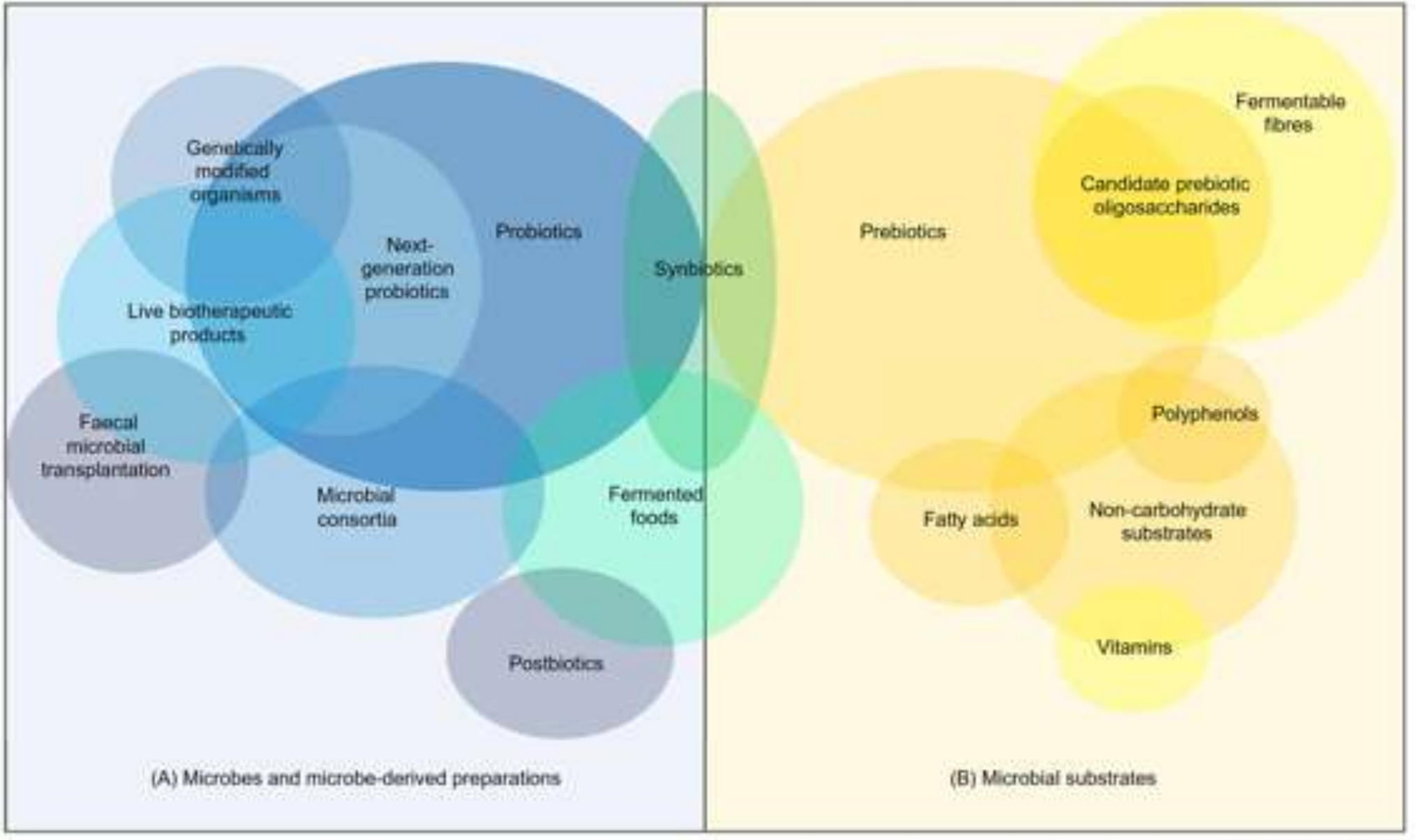


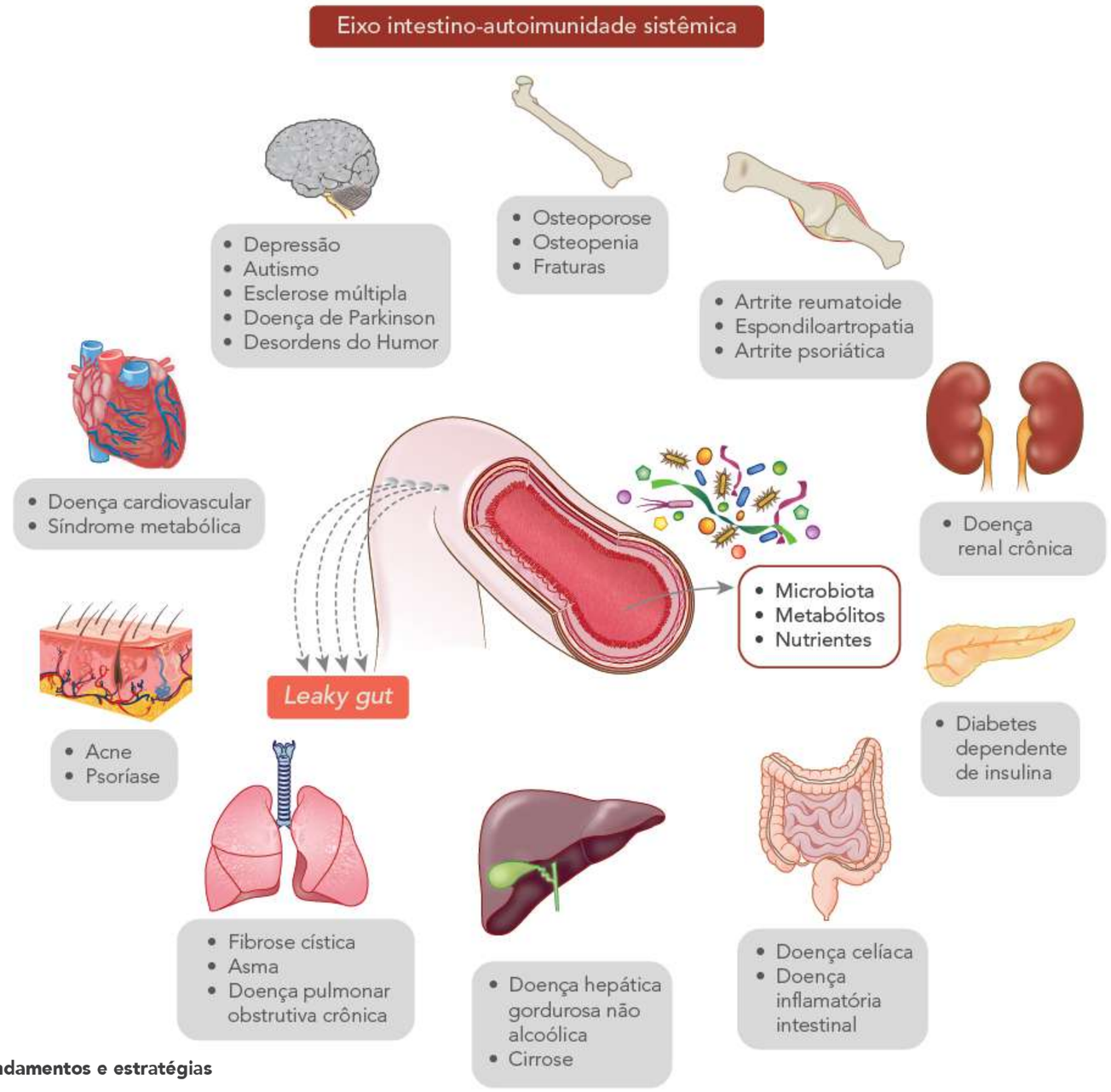
Shaping the Future of Probiotics and Prebiotics

Trends in Microbiology, Month 2021, Vol. xx, No. xx https://doi.org/10.1016/j.tim.2021.01.003



Trends in Microbiology
CellPress
OPEN ACCESS

Figura 2.21: Doenças possivelmente associadas ao eixo intestino-autoimunidade sistêmica



PEREIRA, M.; GOUVEIA, F. **Modulação intestinal: fundamentos e estratégias práticas**. Brasília: Editora Trato, 2019.

Editora Trato

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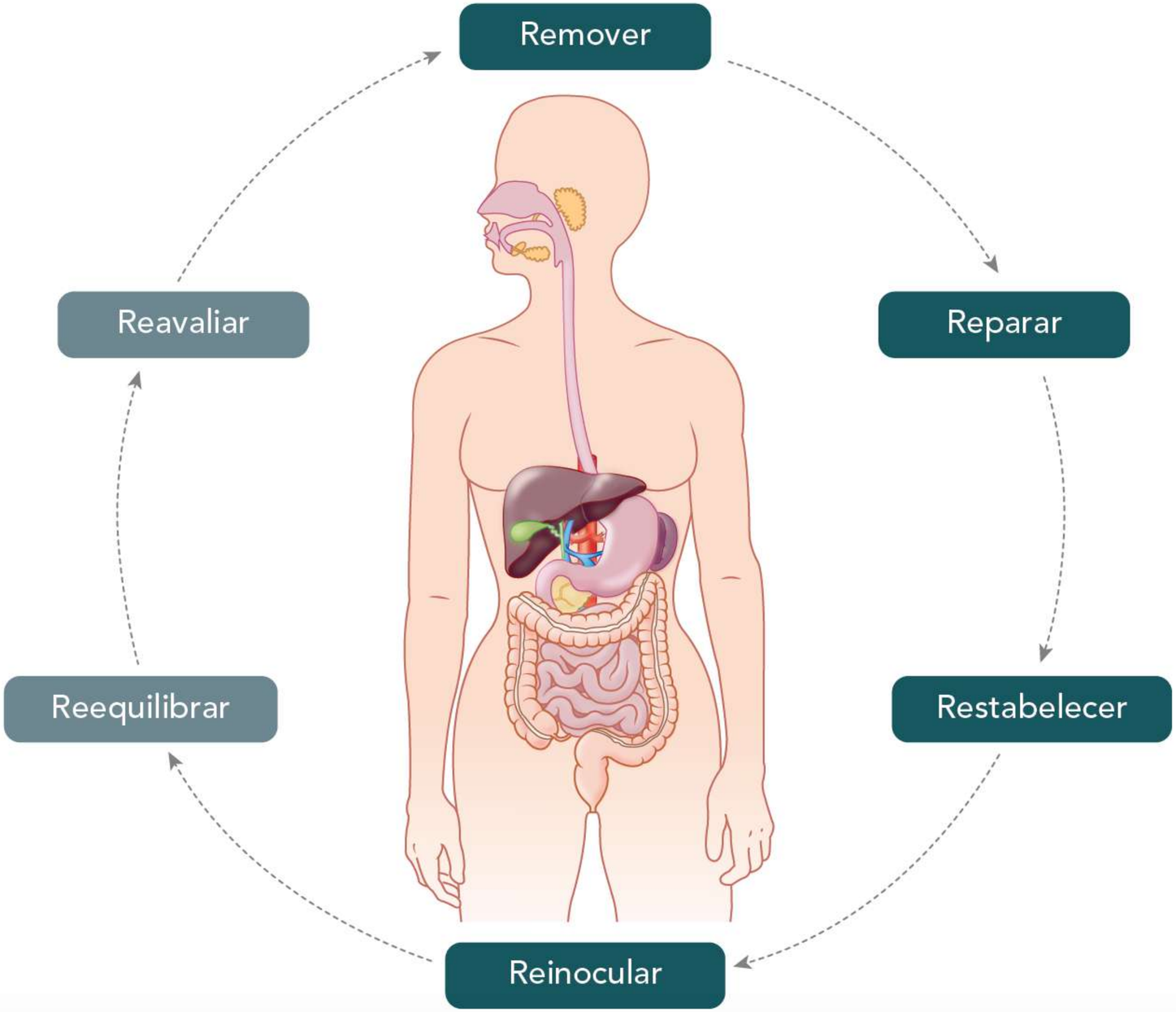
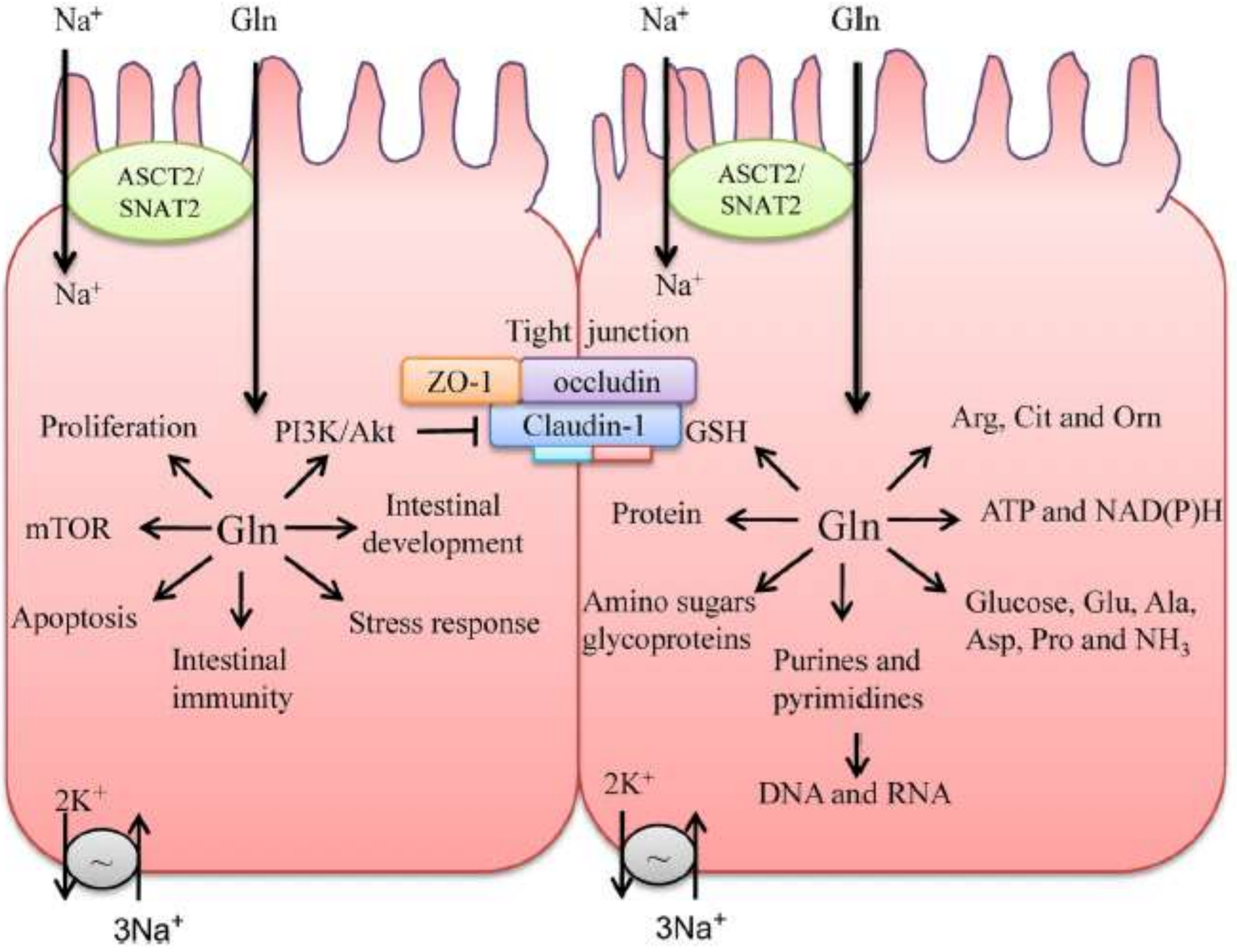


PEREIRA, M.; GOUVEIA, F. **Modulação intestinal: fundamentos e estratégias práticas**. Brasília: Editora Trato, 2019.

Fig. 1 Glutamine plays important roles in intestinal epithelial cells (see text for detail). *AKT* protein kinase B, *ASCT2* neutral amino acid transporter type 2, *ATP* adenosine triphosphate, *mTOR* mammalian target of rapamycin, *NADH* reduced nicotinamide adenine dinucleotide, *NADPH* reduced form of nicotinamide adenine dinucleotide phosphate, *PI3K* phosphoinositide 3 kinase, *SNAT2* sodium coupled neutral amino acid transporter 2, *ZO-1* zonula occludens protein 1



JOURNAL OF THE INTERNATIONAL SOCIETY OF SPORTS NUTRITION
2024, VOL. 21, NO. 1, 2300259
https://doi.org/10.1080/15502783.2023.2300259

Supplementation of L-glutamine enhanced mucosal immunity and improved hormonal status of combat-sport athletes

Methods: Twenty-one combat-sport athletes from the National Taiwan University of Sport were recruited in this study. After intensive training, two groups of the participants were asked to consume powder form of 0.3 g/kg body weight of L-glutamine (GLU group) or maltodextrin (PLA group) with drinking water in a randomized design at the same time every day during 3 weeks. Saliva samples were collected to measure immunoglobulin A (IgA), nitric oxide (NO), testosterone (T) and cortisol (C) before and after three-week supplementation; moreover, Hooper's index questionnaires were completed for wellness assessment. The incidence and duration of URTI were recorded by using a health checklist throughout the entire study period.

Results: Supplementation of L-glutamine significantly enhanced the concentrations of IgA and NO in saliva; additionally, the incidence of URTI was significantly reduced. Regarding hormones, T concentration was significantly decreased in the PLA group, whereas C concentration was significantly increased, resulting in a significant decrease of T/C ratio. In contrast, the GLU group showed a significant increase of T/C ratio, while the mood scores of the Hooper's index questionnaire were higher in the PLA group.

Conclusions: Three-week supplementation of L-glutamine after intensive training enhanced the mucosal immunity, improved

Glutamine Supplementation Enhances the Effects of a Low FODMAP Diet in Irritable Bowel Syndrome Management

doi: 10.3389/fnut.2021.746703

*Samira Rastgoo[1], Nasser Ebrahimi-Daryani[2], Shahram Agah[3], Sara Karimi[2], Mohammad Taher[2], Bahram Rashidkhani[1], Ehsan Hejazi[1], Fatemeh Mohseni[1], Mina Ahmadzadeh[1], Amir Sadeghi[4] and Azita Hekmatdoost[1]**

Background and Aims: Although irritable bowel syndrome is one of the most common gastrointestinal disorders presented to gastroenterologists, therapeutic strategies are not yet well-established. Accordingly, we conducted a randomized, double-blind, placebo-controlled, clinical trial to evaluate the possible superiority of adding glutamine supplement to low fermentable oligo- di- monosaccharides and polyols (FODMAP) diet in patients with irritable bowel syndrome (IBS).

Methods: Eligible adults were randomized to receive a low FODMAP diet either with glutamine (15 g/day) or a placebo for 6 weeks. The primary endpoint was a significant reduction in IBS-symptom severity score (IBS-SSS). Secondary endpoints were changes in IBS symptoms, stool frequency, consistency, and quality of life.

Results: The study group enrolled 50 patients, among which 22 participants from each group completed the study protocol. The glutamine group had significant changes in total IBS-severity score, dissatisfaction of bowel habit and interference with community function (58% reduction; $P < 0.001$, 57% reduction; $P < 0.001$, 51% reduction; $P = 0.043$, respectively). Improvement in IBS-severity score of more than 45% was observed in 22 of 25 participants (88%) in the glutamine group, while it was only 15 of 25 participants (60%) in the control group ($p = 0.015$). No serious adverse events were observed.

CONCLUSION

In conclusion, this randomized, double-blind, placebo-controlled trial has shown the superiority of adding glutamine supplementation to a low FODMAPs diet in amelioration of IBS symptoms, while confirming the beneficial effects of a low FODMAPs diet in IBS management. Further studies are needed to find the optimum dosage of glutamine supplementation for IBS management.

International Immunopharmacology

Volume 124, Part A, November 2023, 110832

https://doi.org/10.1016/j.intimp.2023.110832

Glutamine protects intestinal immunity through microbial metabolites rather than microbiota

Glutamine supplementation promoted immune cell proliferation

Glutamine is critical for boosting immunological function in animals. Intestinal immunity coordinates microbiota and foreign antigens, inhibiting pathogen invasion [15]. According to research, glutamine controls gene expression, intestinal permeability, cell proliferation, and intestinal immunity. Furthermore, glutamine lowers the severity of weaning-associated gastrointestinal infections by changing intestinal barrier function in weaned piglets [16]. However, the effect of glutamine…

Conclusions

In summary, combined with our previous studies, the results suggested that glutamine supplementation may maintain intestinal homeostasis and improving immunity through intestinal microbial metabolism and metabolites (SCFAs, secondary bile acids, etc.).

Fig. 1 Glutamine plays important roles in intestinal epithelial cells (see text for detail). *AKT* protein kinase B, *ASCT2* neutral amino acid transporter type 2, *ATP* adenosine triphosphate, *mTOR* mammalian target of rapamycin, *NADH* reduced nicotinamide adenine dinucleotide, *NADPH* reduced form of nicotinamide adenine dinucleotide phosphate, *PI3K* phosphoinositide 3 kinase, *SNAT2* sodium coupled neutral amino acid transporter 2, *ZO-1* zonula occludens protein 1

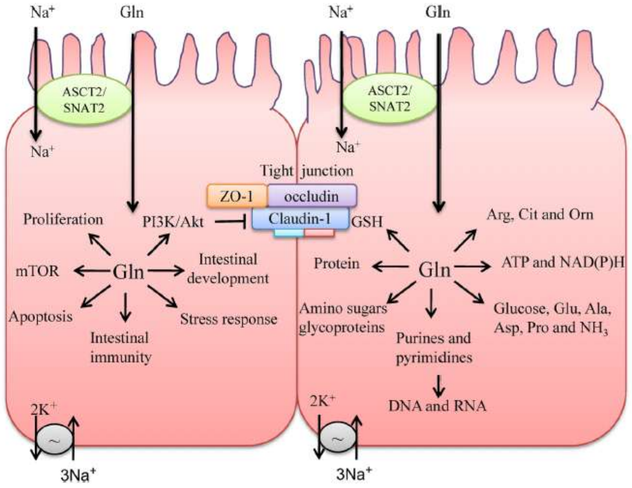
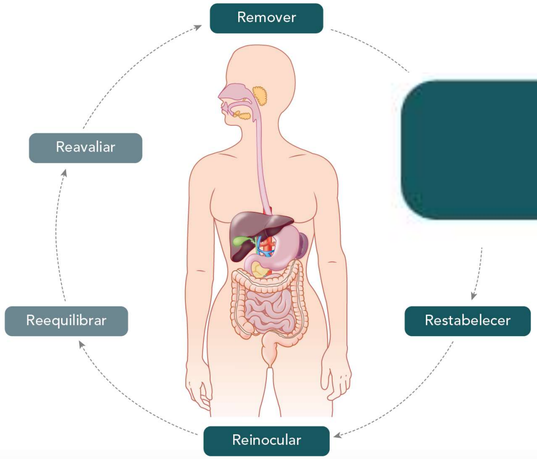


Figura 4.3: Ações do Programa dos 6 Rs



Glutamina 3g

INFORMAÇÃO NUTRICIONAL

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Porção: 17 g (2 sachês)

	17 g	%VD*
Valor energético (kcal)	24	1
Carboidratos (g)	2	1
Proteína (g)	0	0
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Sódio (mg)	9	1
Vitamina D (µg)	50	333
Vitamina C (mg)	1000	1000
Zinco (mg)	15	136

Não contém quantidades significativas de proteínas, açúcares totais, açúcares adicionados, gorduras totais, gorduras saturadas e gorduras trans.

*Percentual de valores diários fornecidos pela porção.

Intestinal metabolomics in premature infants with late-onset sepsis

Jingfei Liu[1], Li Zhang[2], Dong Li[3]✉, Xiaotong Yu[1], Ying Gao[1] & Ying Zhou[1]

We aimed to investigate the characteristics of intestinal metabolomics and non-invasive biomarkers for early diagnosis of late-onset sepsis (LOS) by analyzing gut metabolites in preterm infants with LOS. We collected stool samples from septic and healthy preterm infants for analysis by liquid chromatography–mass spectrometry. 123 different metabolites were identified and 13 pathways were mainly involved. Glycine, serine, and threonine metabolism; glyoxylate and dicarboxylic acid metabolism; glutathione metabolism; primary bile acid biosynthesis; steroid synthesis; pentose and glucuronic acid interconversion may be involved in the pathogenesis of LOS in preterm infants. The significant changes of N-Methyldopamine, cellulose, glycine, gamma-Glutamyltryptophan, N-Ribosylnicotinamide and 1alpha, 25-dihydroxycholecalciferol showed specific diagnostic values and as non-invasive biomarkers for LOS.

Scientific Reports | (2024) 14:4659 | https://doi.org/10.1038/s41598-024-55398-7

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Glicina 3g

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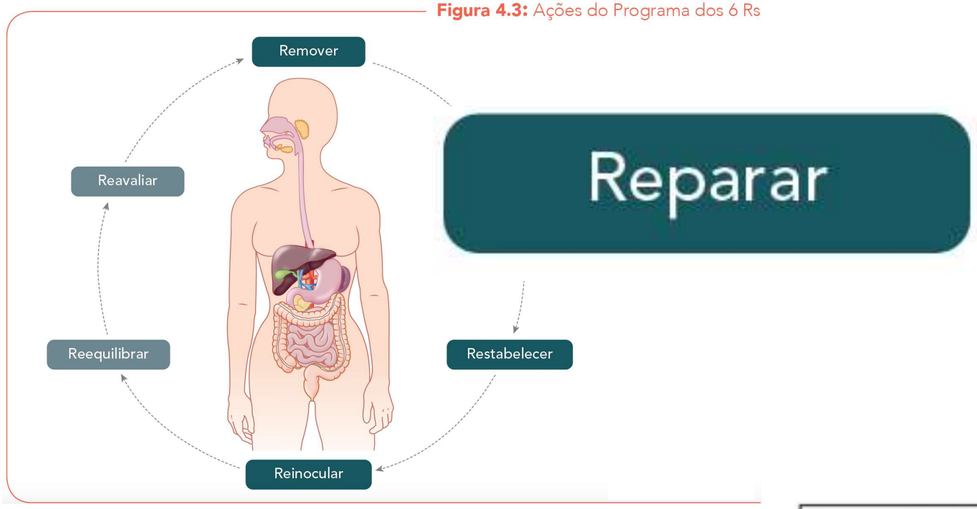

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frontiers in IMMUNOLOGY

REVIEW ARTICLE
published: 11 July 2013
doi: 10.3389/fimmu.2013.00189

Vitamin-mediated regulation of intestinal immunity

Jun Kunisawa[1,2,3,4,5]* *and Hiroshi Kiyono*[2,3,4,6,7]*

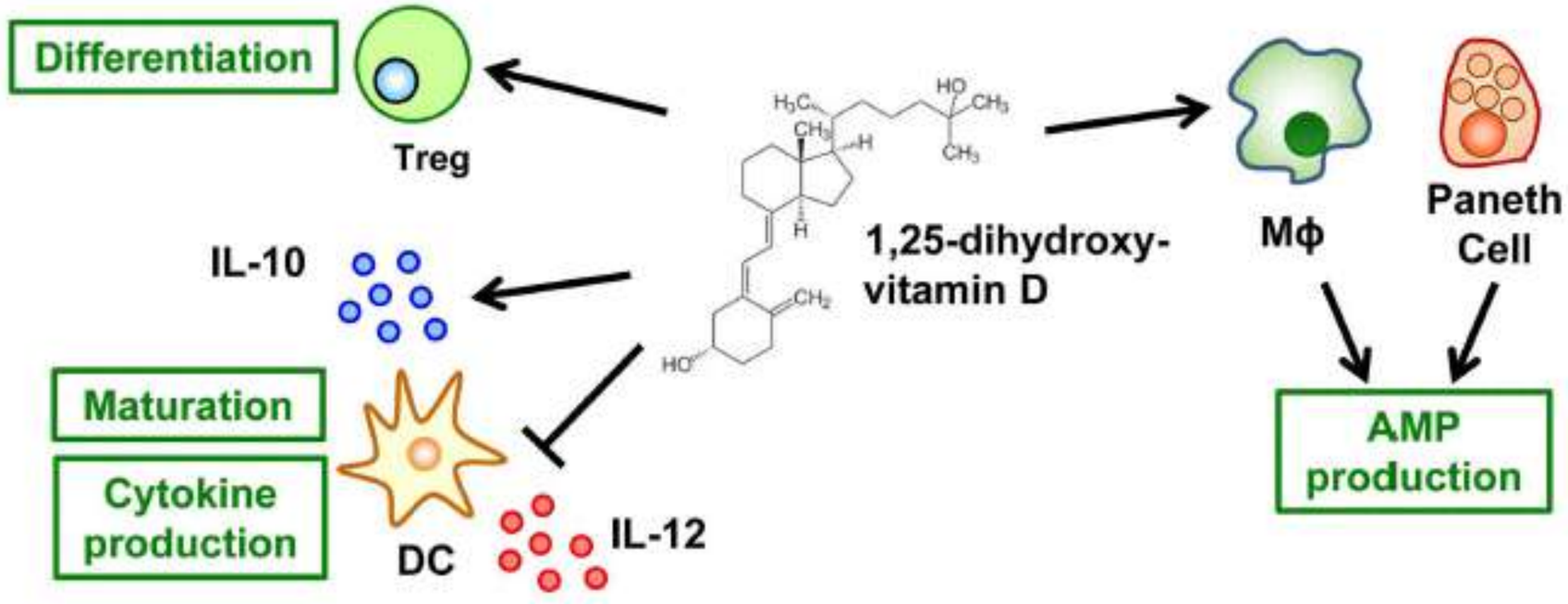
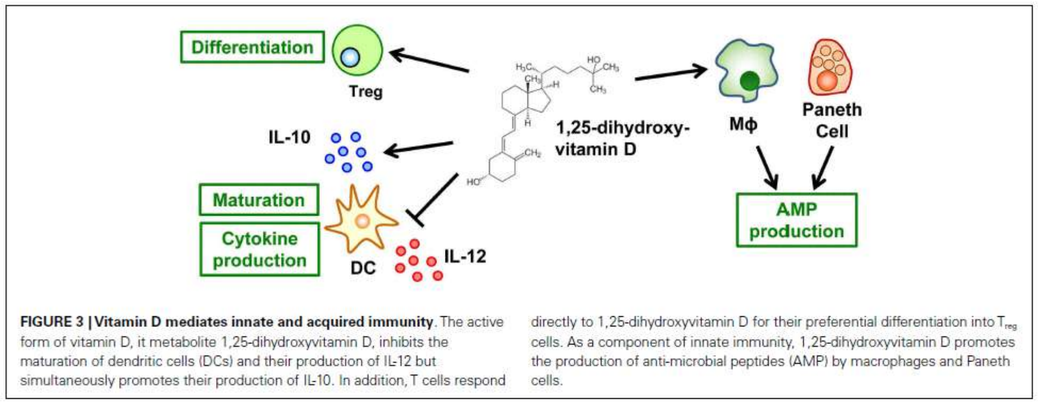


FIGURE 3 | Vitamin D mediates innate and acquired immunity. The active form of vitamin D, it metabolite 1,25-dihydroxyvitamin D, inhibits the maturation of dendritic cells (DCs) and their production of IL-12 but simultaneously promotes their production of IL-10. In addition, T cells respond directly to 1,25-dihydroxyvitamin D for their preferential differentiation into T_{reg} cells. As a component of innate immunity, 1,25-dihydroxyvitamin D promotes the production of anti-microbial peptides (AMP) by macrophages and Paneth cells.



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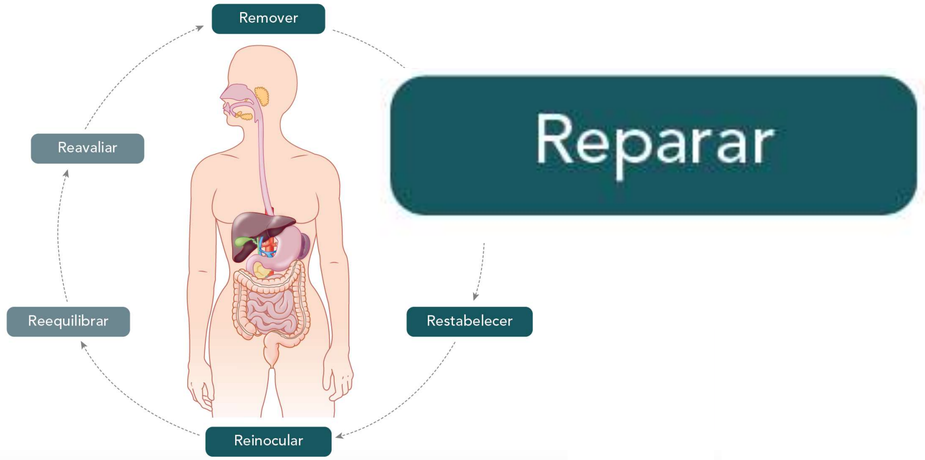

Vitamina D (25OH vit D) ……. Até 2.000UI

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*Percentual de valores diários fornecidos pela porção.

Letters in Applied Microbiology 2002, **35**, 267–271

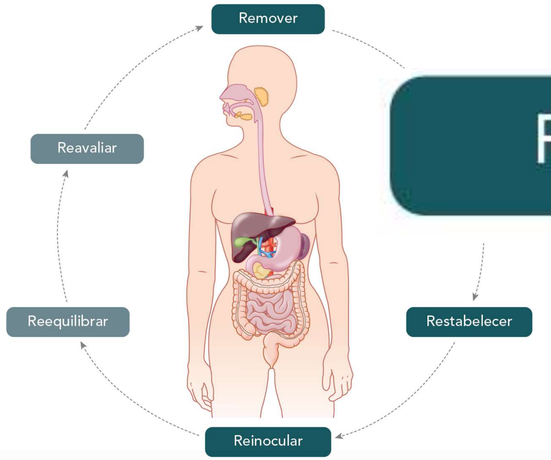
Preparation of microparticulate β-glucan from *Saccharomyces cerevisiae* for use in immune potentiation

K.W. Hunter Jr, R.A. Gault and M.D. Berner
Department of Microbiology, University of Nevada School of Medicine, Reno, NV, USA

2002/126: received 29 April 2002 and accepted 20 June 2002

Beta Glucana de levedura 220mg

Figura 4.3: Ações do Programa dos 6 Rs



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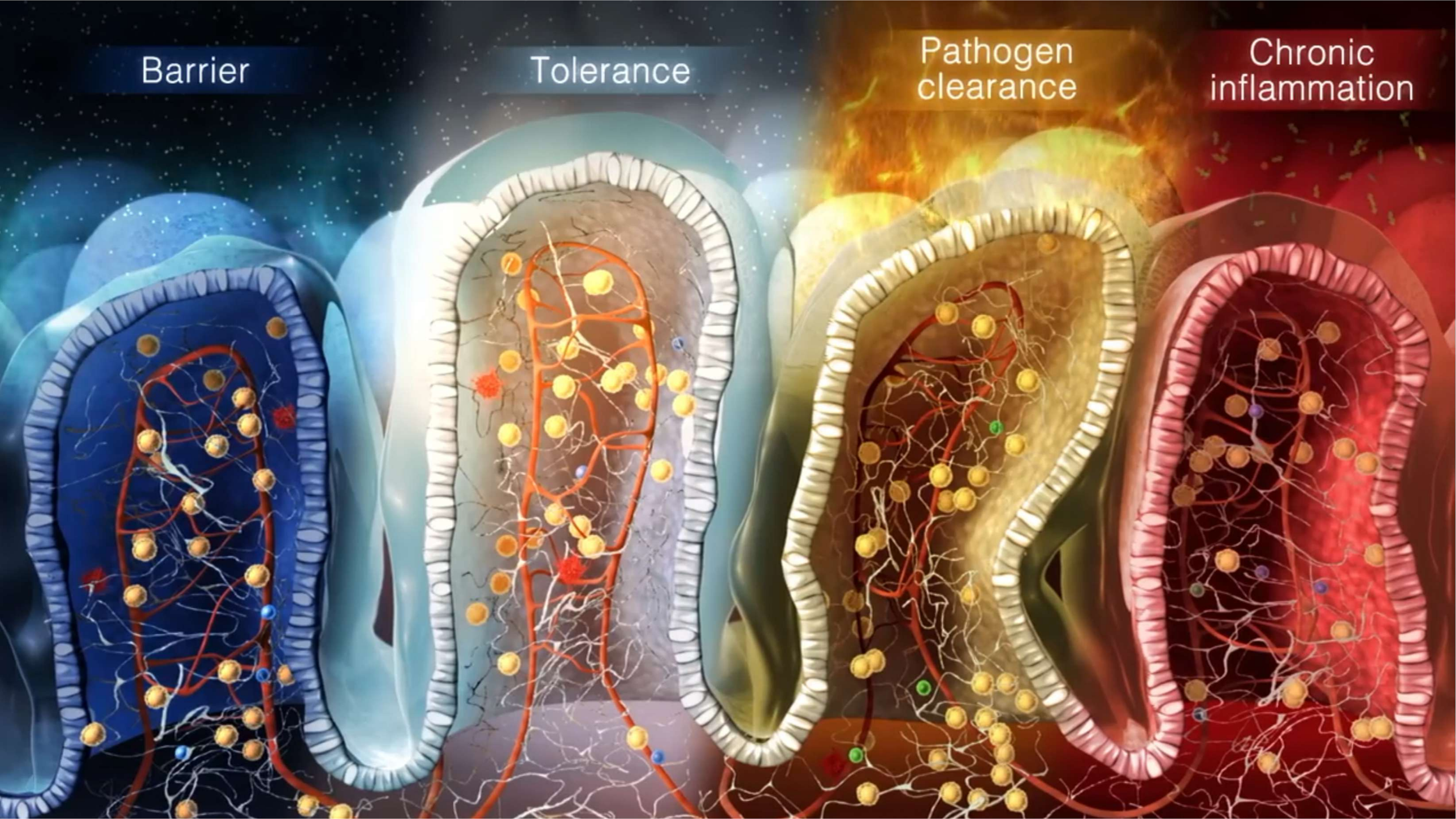

Barrier
Tolerance
Pathogen clearance
Chronic inflammation

ELSEVIER DOYMA

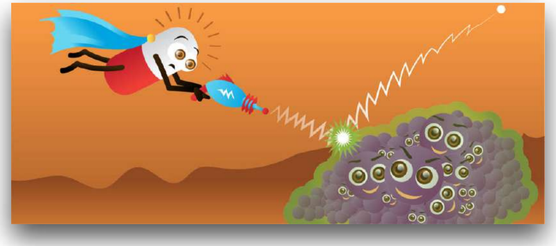
Enfermedades Infecciosas y Microbiología Clínica

www.elsevier.es/eimc

Original article

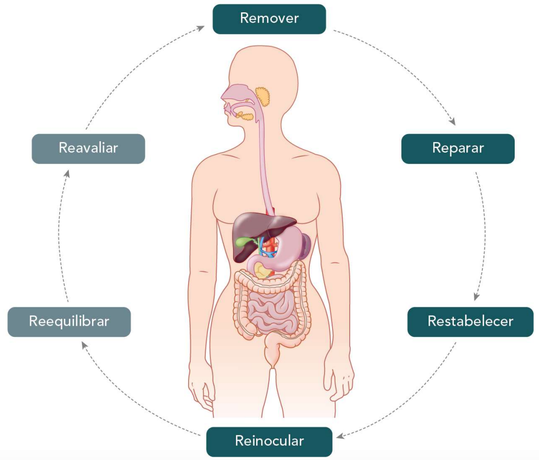
Combined effect of linezolid and *N*-acetylcysteine against *Staphylococcus epidermidis* biofilms

http://dx.doi.org/10.1016/j.eimc.2012.11.011



N-acetilcisteína 600mg

Figura 4.3: Ações do Programa dos 6 Rs



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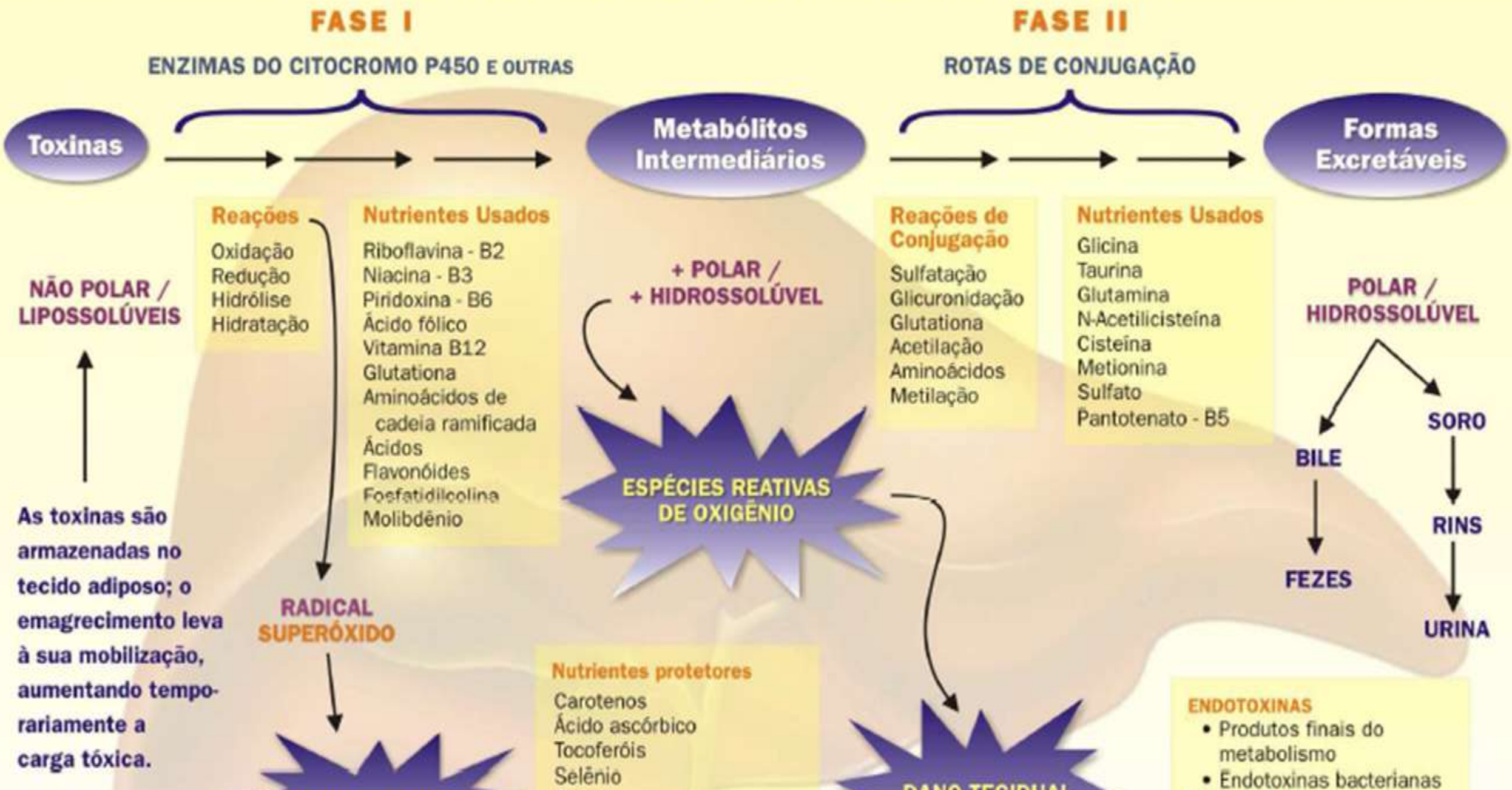
Suporte Nutricional à Detoxificação Hepática



INFORMAÇÃO NUTRICIONAL

Porções por embalagem: 120
Porção: 0,6 g (1 cápsulas)

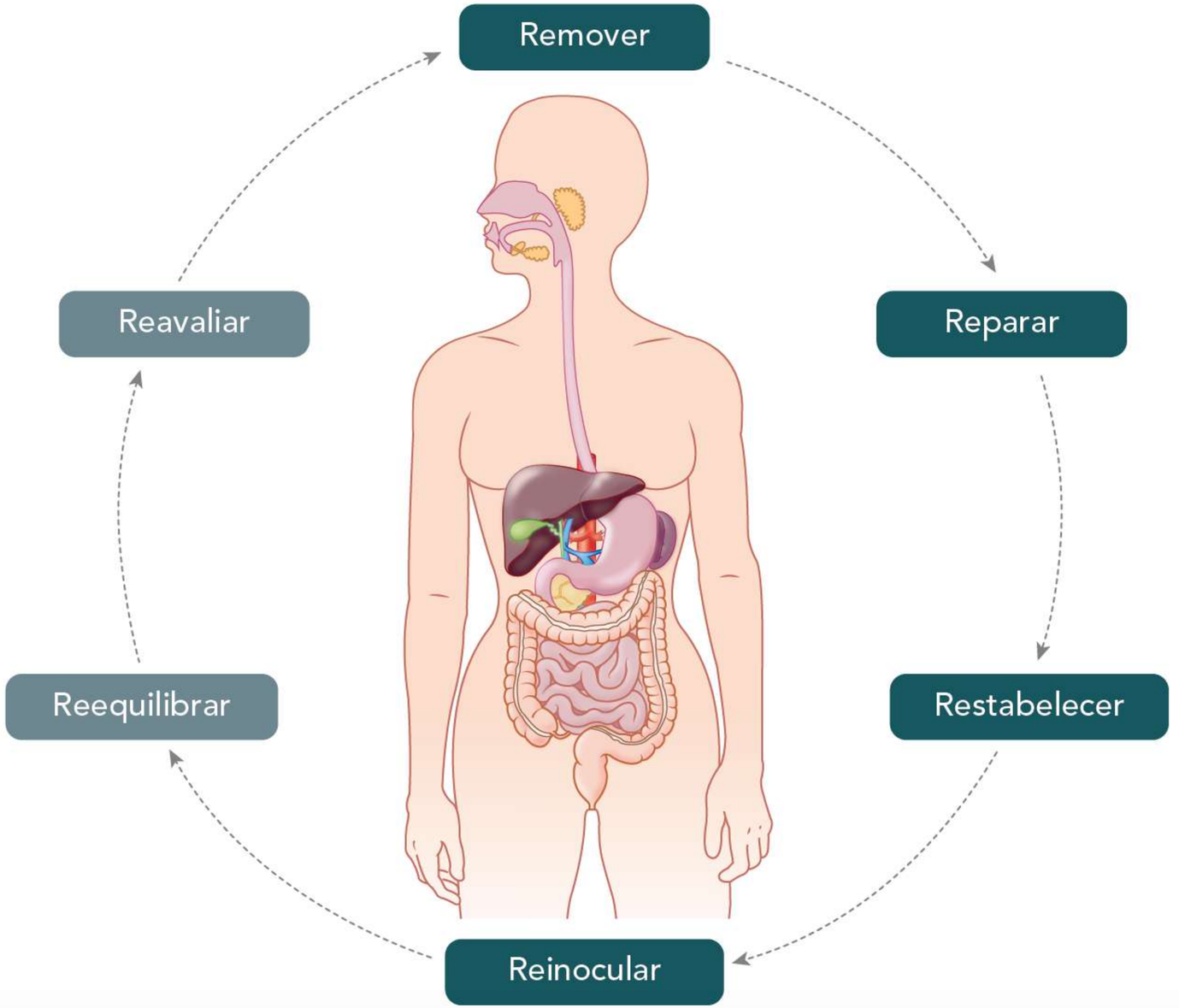
	0,6	%VD*
Vitamina C	100	100
Vitamina B1 (mg)	2	167
Vitamina B2 (mg)	2	167
Vitamina B3 (mg)	15	100
Vitamina B5 (mg)	5	100
Vitamina B6 (mg)	20	1538
Vitamina B7 (µg)	40	133
Vitamina B9 (µg)	1200	500
Vitamina B12 (µg)	9,9	412
Colina	100	18
Inositol	100	

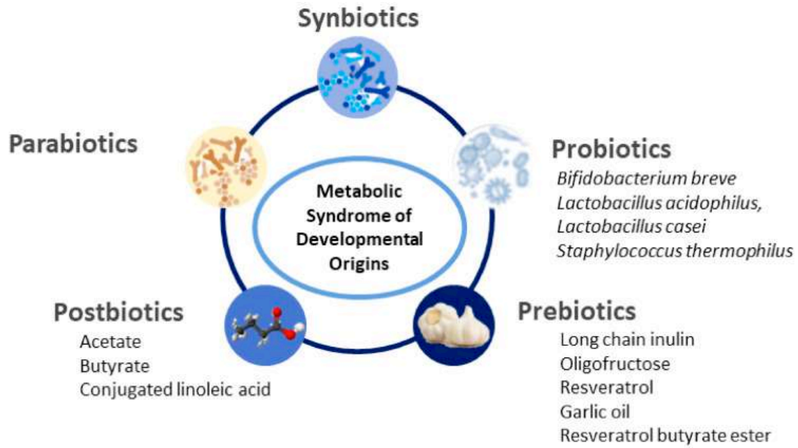
Não contém quantidades significativas de valor energético, carboidratos, açucares totais, açúcares adicionados, gorduras totais, gorduras saturadas, gorduras trans, proteínas, fibra alimentar e sódio.

*Percentual de valores diários fornecidos pela porção.

Editora Trato

Figura 4.3: Ações do Programa dos 6 Rs





Int J Mol Sci. 2022 Sep 5;23(17):10173.
doi: 10.3390/ijms231710173

PEREIRA, M.; GOUVEIA, F. **Modulação intestinal: fundamentos e estratégias práticas**. Brasília: Editora Trato, 2019.

Rethinking healthy eating in light of the gut microbiome

https://doi.org/10.1016/j.chom.2022.04.016

Cell Host & Microbe *30*, June 8, 2022

Anissa M. Armet,[1] Edward C. Deehan,[1] Aidan F. O'Sullivan,[2,3] João F. Mota,[3,4] Catherine J. Field,[1] Carla M. Prado,[1] Alice J. Lucey,[2] and Jens Walter[3,*]

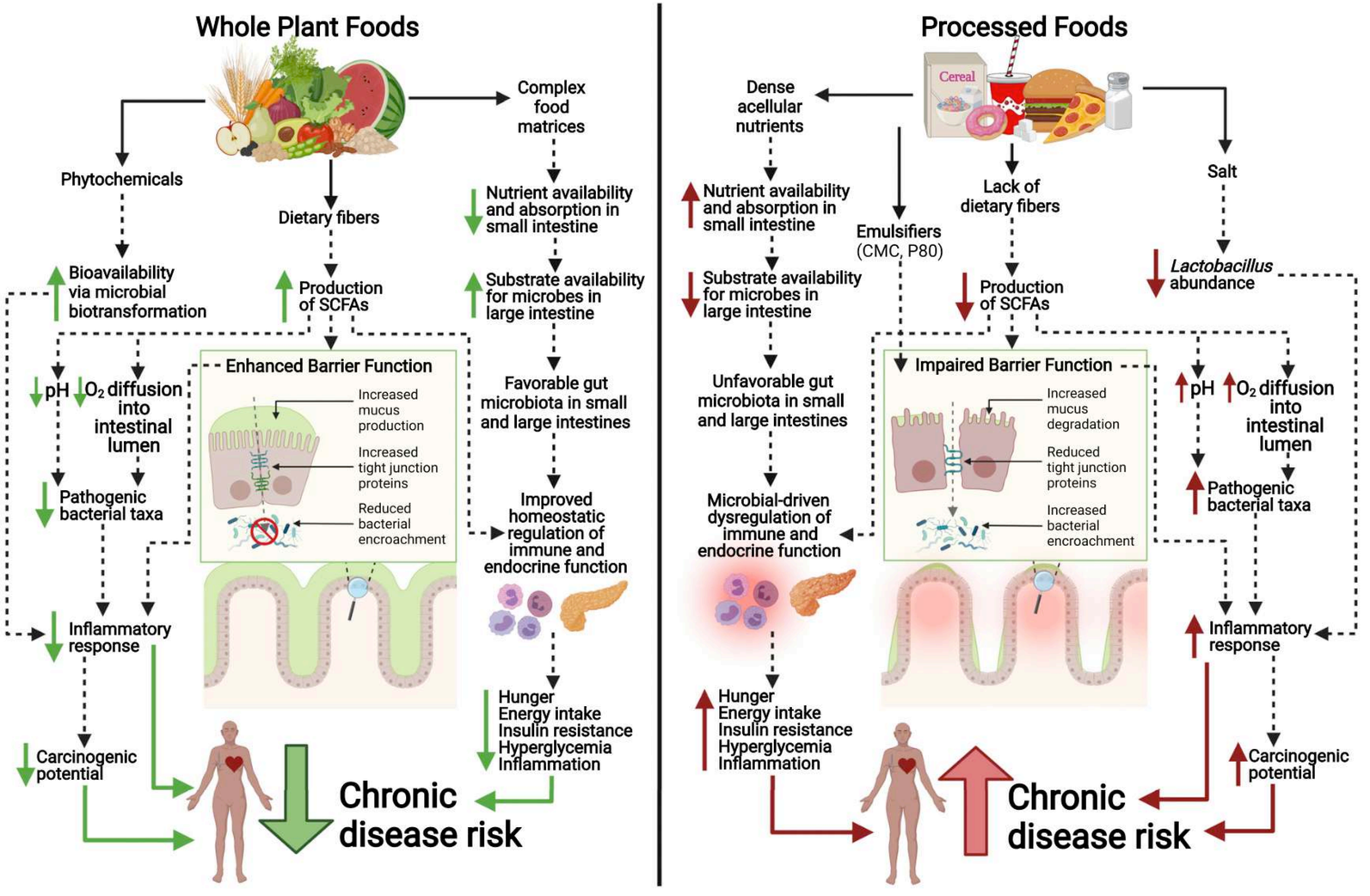
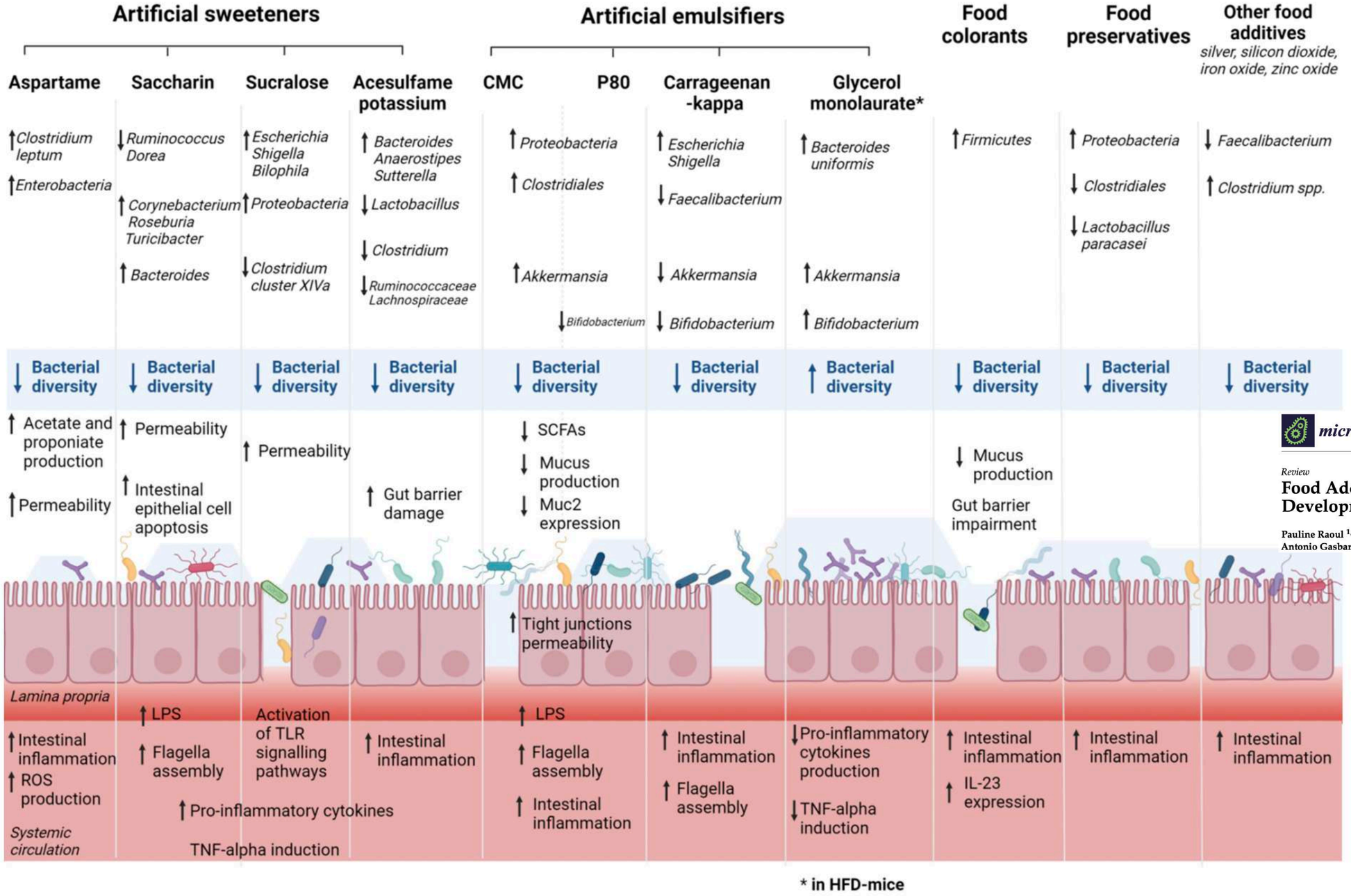


Figure 1. Comparison of the effects of whole-plant foods and processed foods on the gut microbiome and implications for host physiology, immunology, metabolism, and disease risk

Microorganisms **2022**, *10*, 167. https://doi.org/10.3390/microorganisms10010167



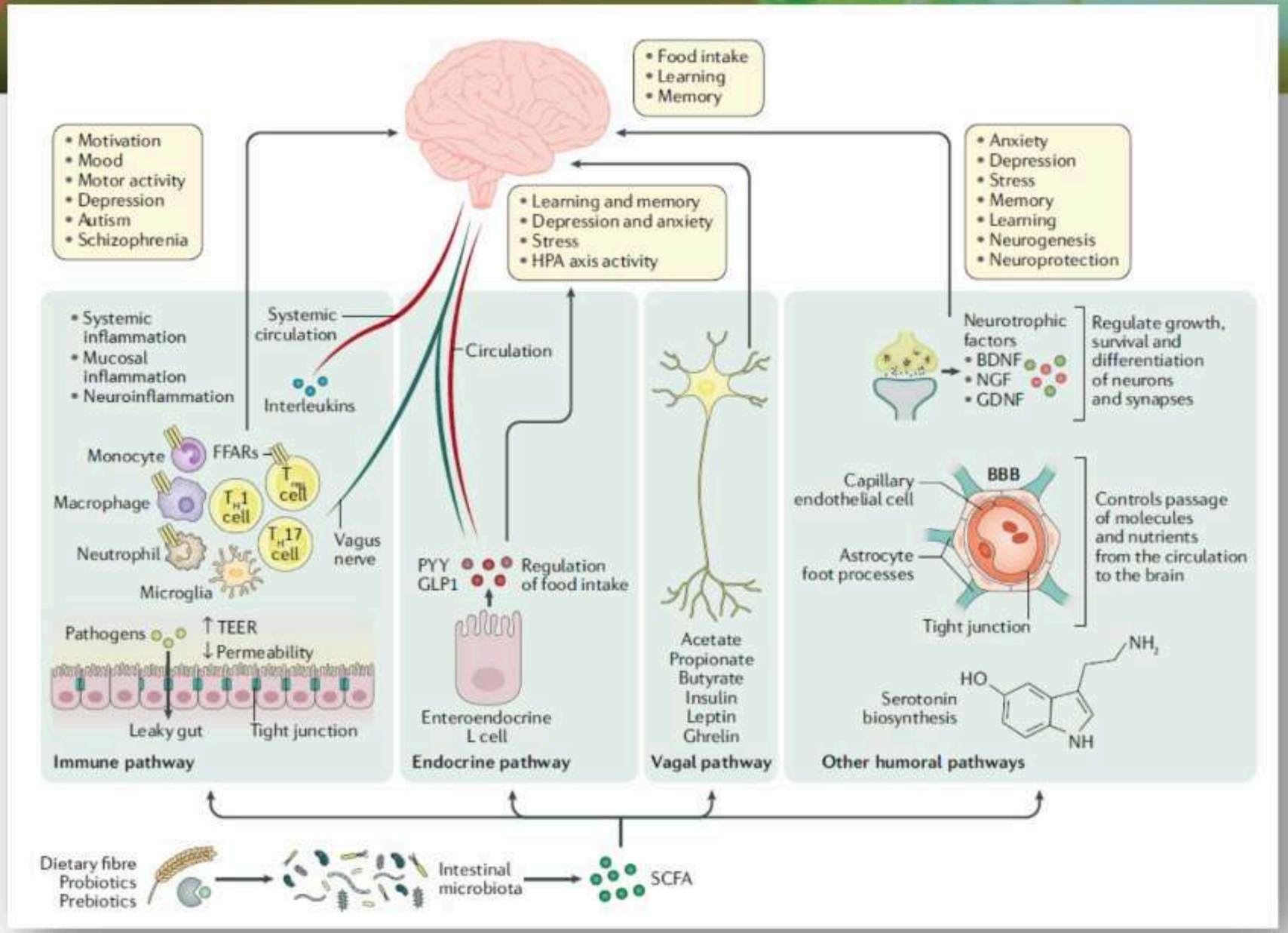
microorganisms

MDPI

Review

Food Additives, a Key Environmental Factor in the Development of IBD through Gut Dysbiosis

Pauline Raoul [1,†], Marco Cintoni [1,†], Marta Palombaro [1,*], Luisa Basso [1], Emanuele Rinninella [1,2], Antonio Gasbarrini [2,3] and Maria Cristina Mele [1,2]



Fonte:
Nat Rev Gastroenterol Hepatol. 2019 Aug;16(8):461-478

Basavaprabhu H. Nataraj[1], Syed Azmal Ali[2], Pradip V. Behare[1*] and Hariom Yadav[3*]

Nataraj *et al. Microb Cell Fact* (2020) 19:168
https://doi.org/10.1186/s12934-020-01426-w

BMC Microbial Cell Factories

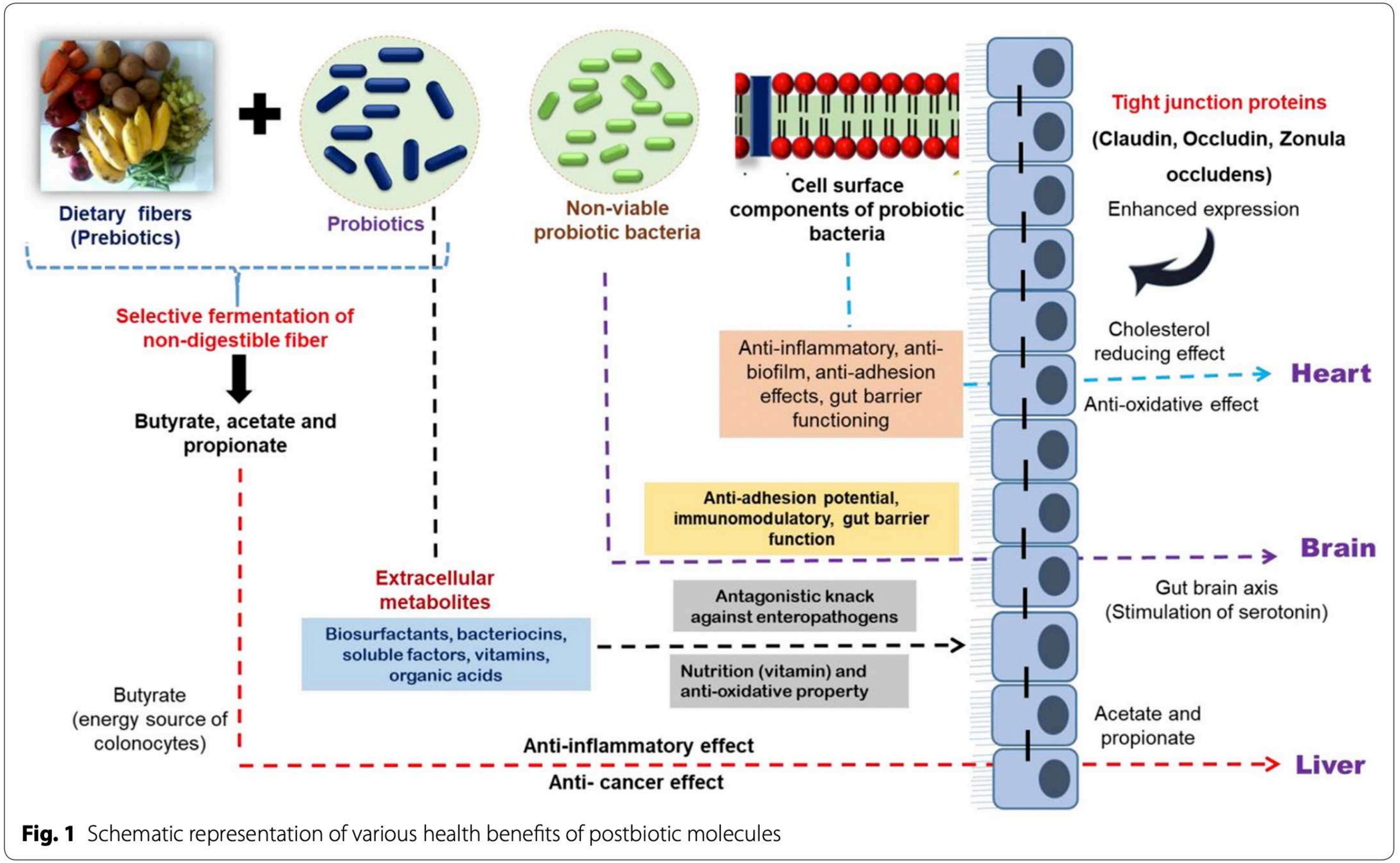
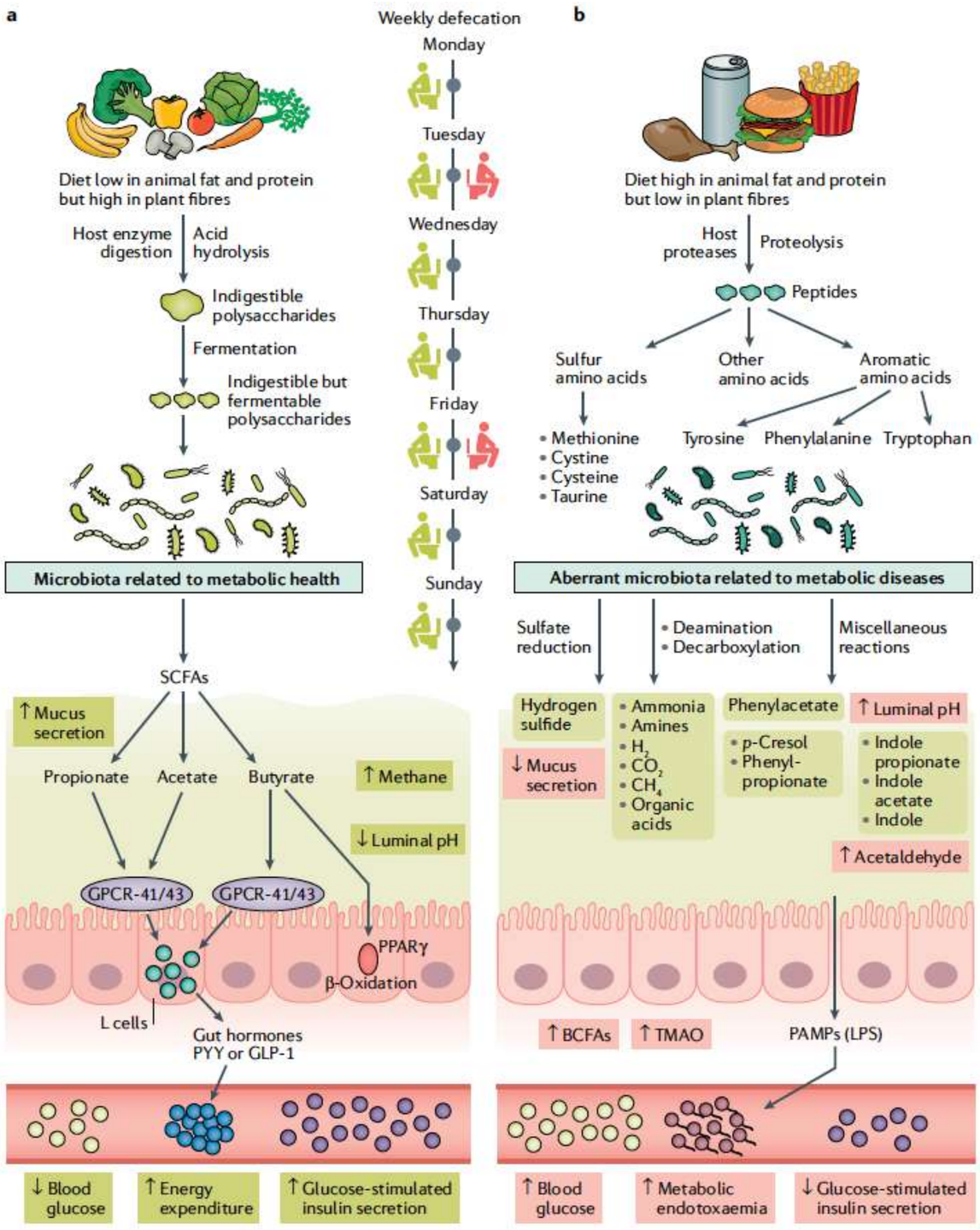


Fig. 1 Schematic representation of various health benefits of postbiotic molecules



Gut microbiota in human metabolic health and disease

Yong Fan and Oluf Pedersen ✉

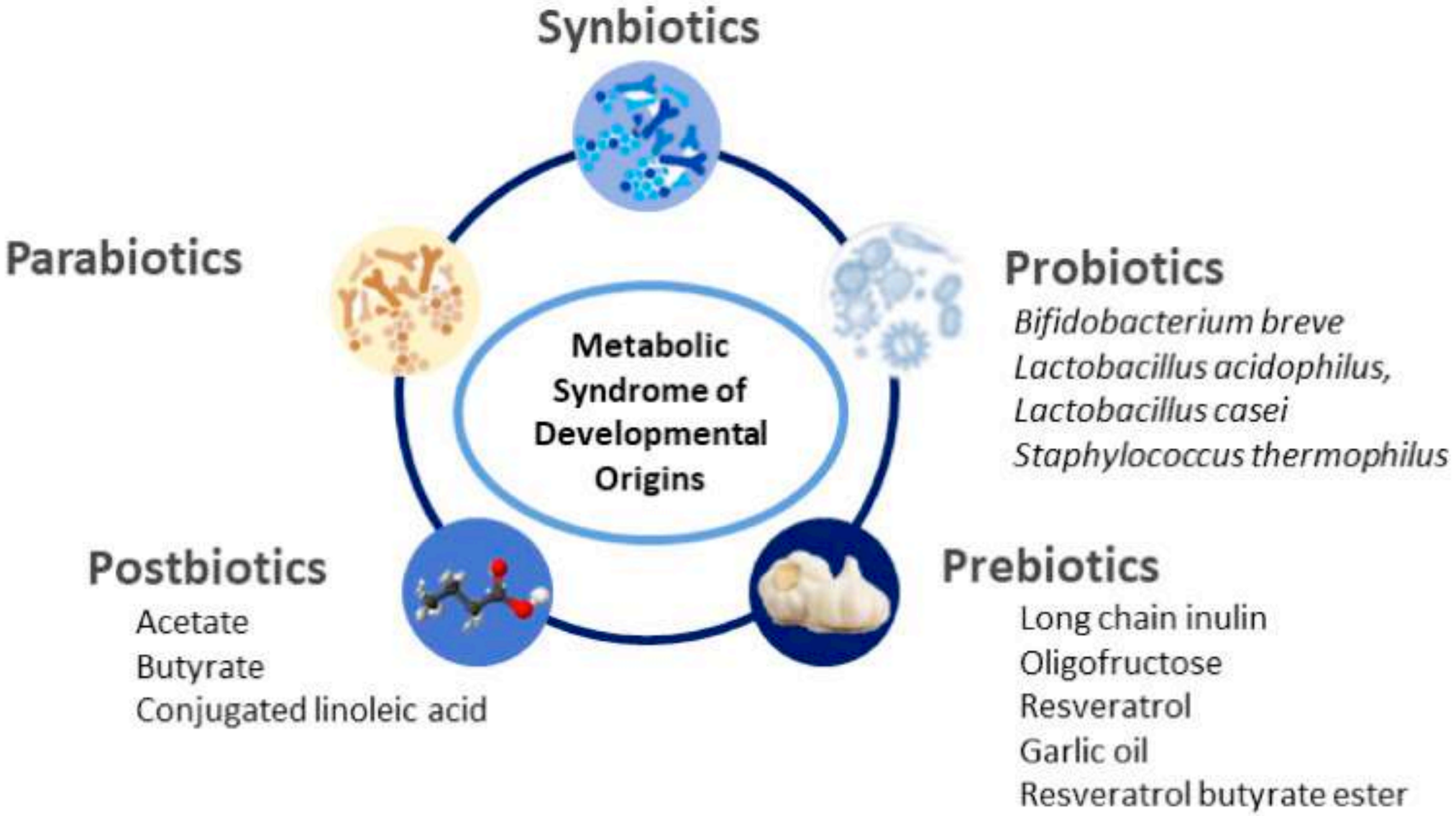
04 September 2020

https://doi.org/10.1038/s41579-020-0433-9

International Journal of Molecular Sciences

Maternal Supplementation of Probiotics, Prebiotics or Postbiotics to Prevent Offspring Metabolic Syndrome: The Gap between Preclinical Results and Clinical Translation

Int J Mol Sci. 2022 Sep 5;23(17):10173.
doi: 10.3390/ijms231710173



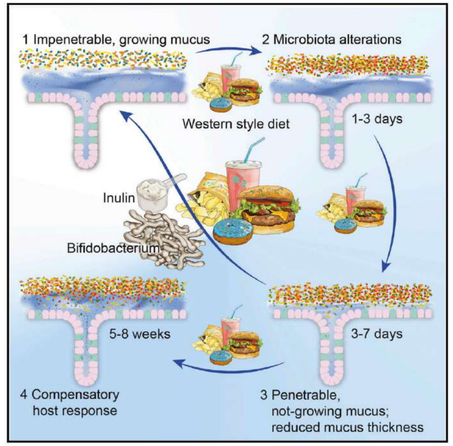
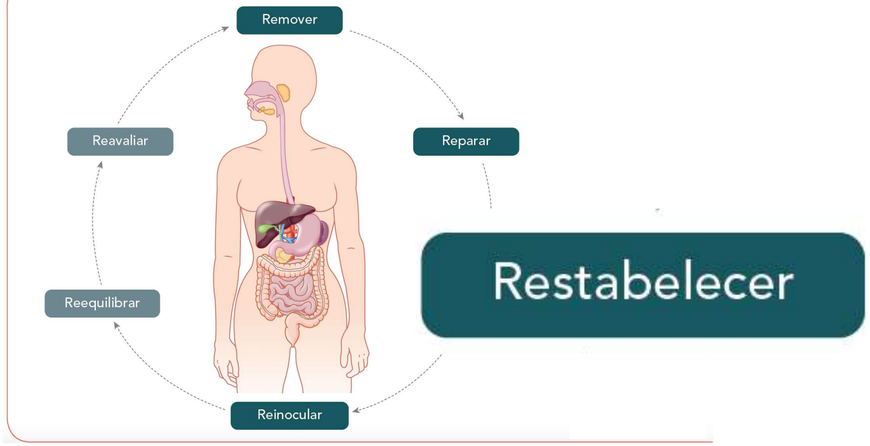


Figura 4.3: Ações do Programa dos 6 Rs



Goma acácia……6g

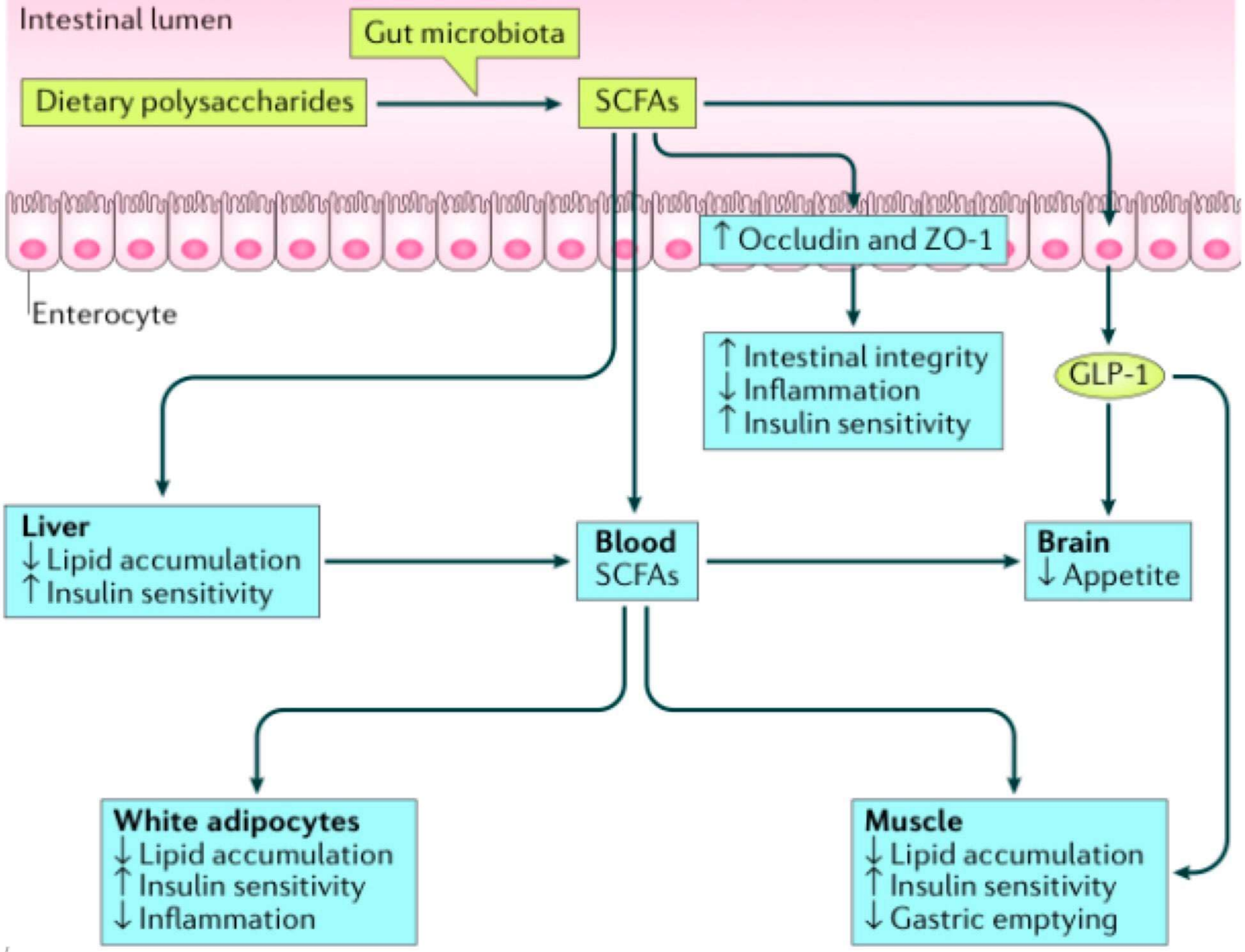
INFORMAÇÃO NUTRICIONAL

Porções por embalagem: 15
Porção: 17 g (2 sachês)

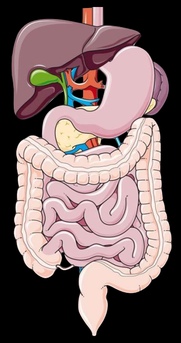
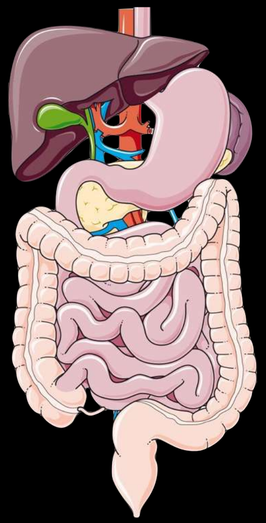
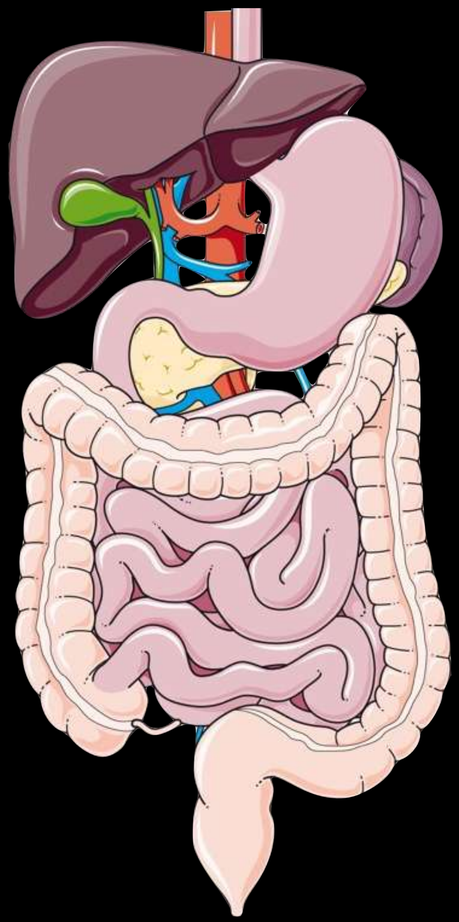
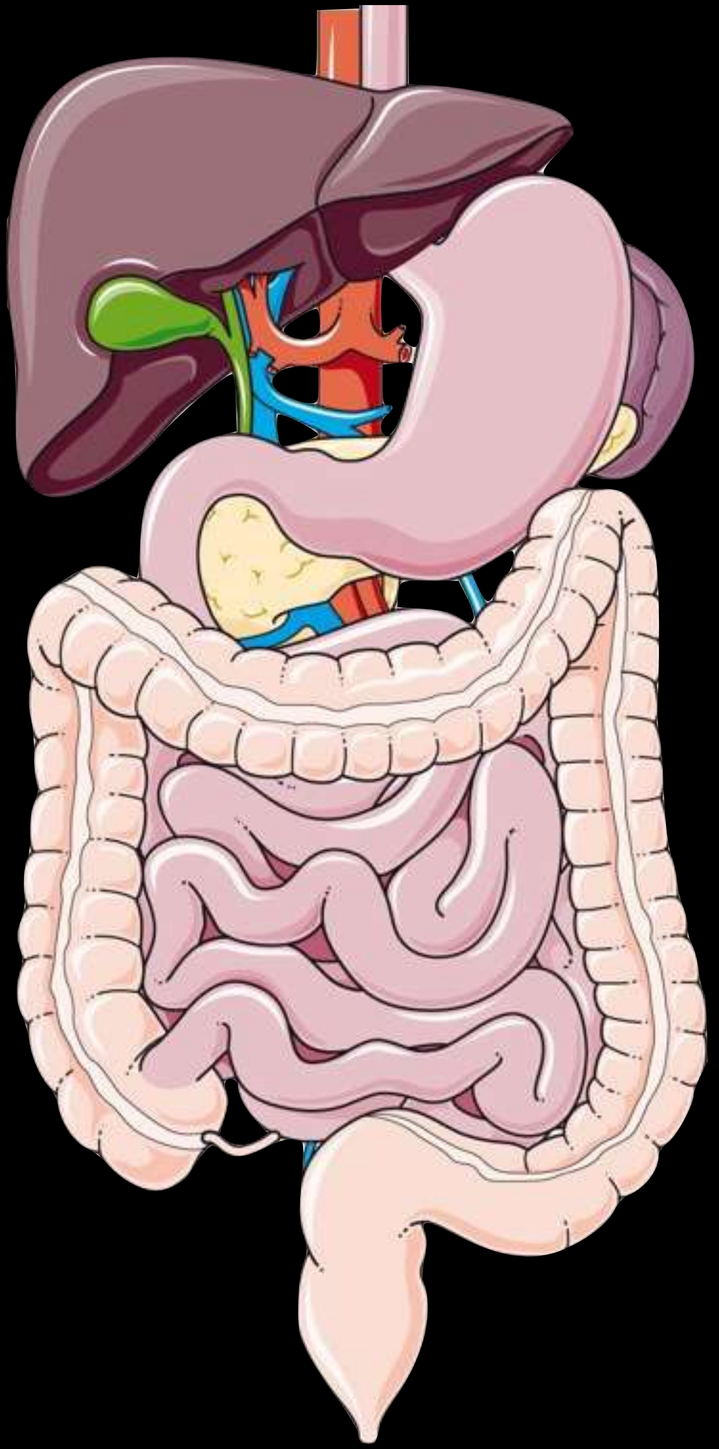
	17 g	%VD*
Valor energético (kcal)	24	1
Carboidratos (g)	2	1
Proteína (g)	0	0
Cisteína (mg)	600	
Glicina (mg)	2980	
Glutamina (mg)	3000	
Fibras Alimentares (g)	6	24
Goma acácia (*Acacia senegal L.*) (g)	6	
Beta-glucana de levedura (*Sacharomyces cerevisiae*) (mg)	221	
Sódio (mg)	9	1
Vitamina D (µg)	50	333
Vitamina C (mg)	1000	1000
Zinco (mg)	15	136

Não contém quantidades significativas de proteínas, açúcares totais, açúcares adicionados, gorduras totais, gorduras saturadas e gorduras trans.

*Percentual de valores diários fornecidos pela porção.



doi:10.1038/nrendo.2016.142
Published online 16 Sep 2016

Shaping the Future of Probiotics and Prebiotics

Trends in Microbiology, Month 2021, Vol. xx, No. xx https://doi.org/10.1016/j.tim.2021.01.003

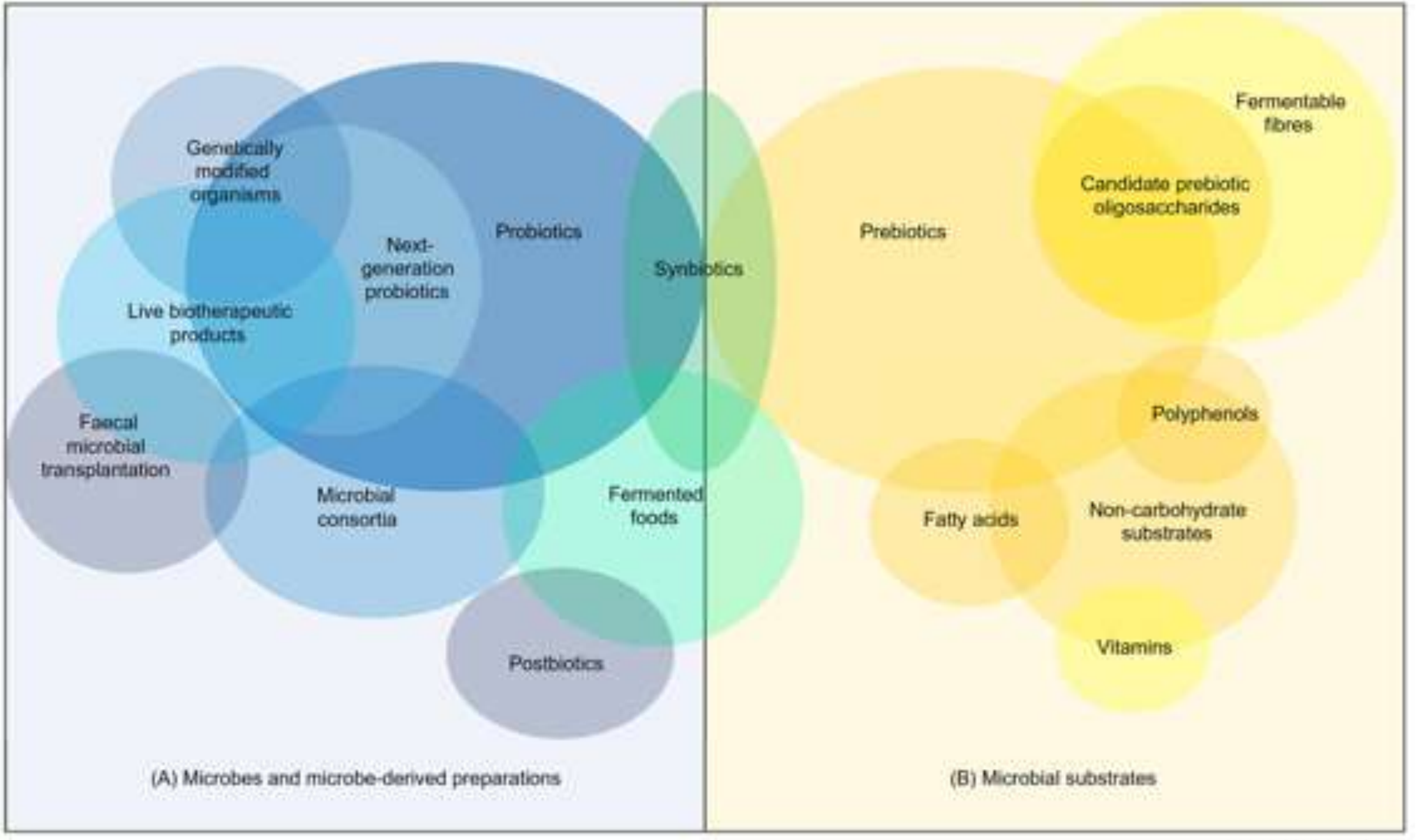


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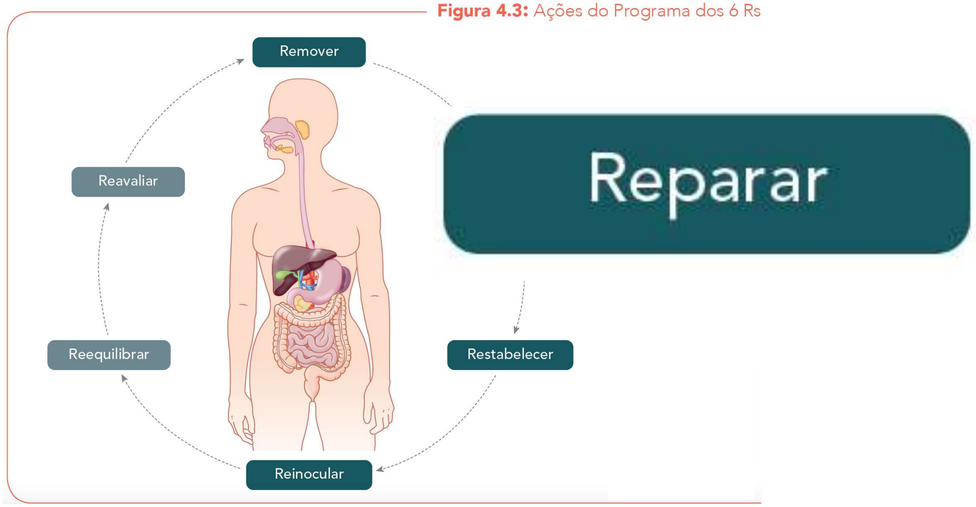
Figura 4.3: Ações do Programa dos 6 Rs



Modulação Intestinal

Prescrição

Guardian ® 8,5g

Obs:

Apresentação: Sachê — 30 doses

Posologia: Tomar 1 dose 2 vezes ao dia, pela manhã e à tarde, nos primeiros 15 dias. Posteriormente até 4 semanas - 1 dose ao dia.

Modulação Intestinal

FORMAÇÃO EM MODULAÇÃO INTESTINAL

Murilo Pereira

Eu pratico modulação intestinal.

Murilo Pereira

Editora Trato

PEREIRA, M.; GOUVEIA, F. **Modulação intestinal: fundamentos e estratégias práticas**. Brasília: Editora Trato, 2019.