

The background features a complex, abstract structure resembling a biological or chemical network. It consists of interconnected, branching, and spherical elements. The color palette is primarily light blue and yellow, with some darker blue accents. The overall appearance is that of a microscopic view of a complex system, possibly a cell or a molecular structure.

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**PRACTITIONER DEVELOPMENT  
SERIES**

# **CANDIDA DIE OFF REACTIONS**

**PREVENTION AND MITIGATION STRATEGIES**



# **SPEAKER**

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Naturopathic Physician for 10+ years

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# GOALS AND OBJECTIVES

# GOALS

- 01** What is a Candida die off reaction?
- 02** Prevent strategies
- 03** Mitigation if it happens
- 04** Foundational mechanisms of these approaches



# JARISCH-HERXHEIMER REACTION

A number of local and systemic symptoms from a mass killing of a microbial organism

Usually starts within 24 hours of antimicrobial initiation

First discovered in the late 19th Century; More pronounced once penicillin was developed



# JARISCH-HERXHEIMER REACTION

First seen in Syphilis

Later in Lyme disease, leptospirosis, and relapsing fever  
(Spirochete bacteria)

Seen with a number of antibiotics: penicillins, tetracyclines,  
erythromycin, cephalosporins, meropenem, ciprofloxacin,  
levofloxacin, clarithromycin, and azithromycin

Butler T. The Jarisch-Herxheimer Reaction After Antibiotic Treatment of Spirochetal Infections: A Review of Recent Cases and Our Understanding of Pathogenesis. Am J Trop Med Hyg. 2017;96(1):46-52. doi:10.4269/ajtmh.16-0434



# JARISCH-HERXHEIMER REACTION

Symptoms commonly include:

- Fever
- Chills
- Headache
- Myalgia
- Skin rashes; worsening of current skin lesions
- Nausea, Vomiting
- Sweating
- Tachycardia

Butler T. The Jarisch-Herxheimer Reaction After Antibiotic Treatment of Spirochetal Infections: A Review of Recent Cases and Our Understanding of Pathogenesis. Am J Trop Med Hyg. 2017;96(1):46-52. doi:10.4269/ajtmh.16-0434



# JARISCH-HERXHEIMER REACTION

Pathogenesis:

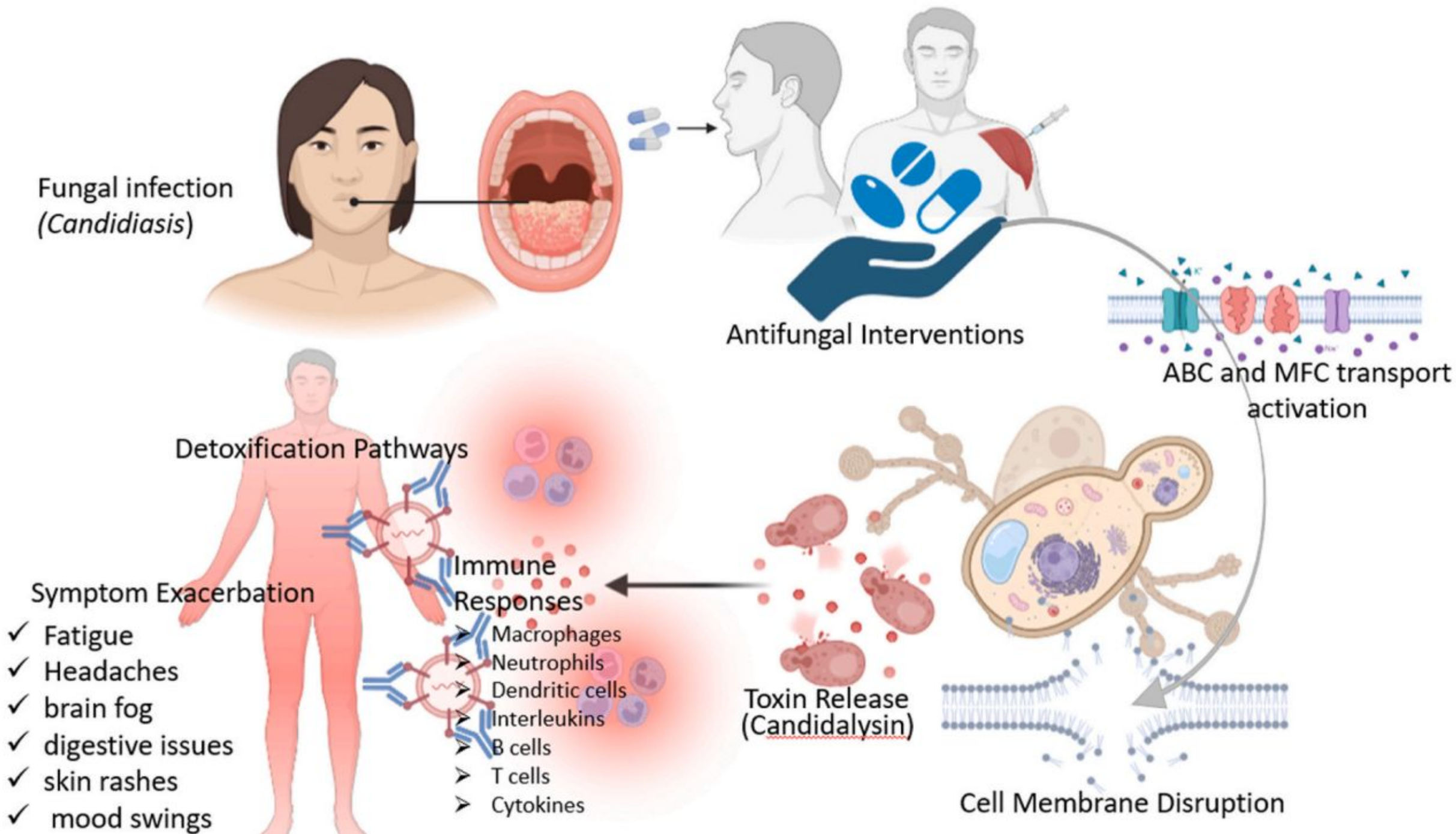
The rapid release of multiple cellular factors that lead to a cascade of cytokine activation and immune signaling pathways.

Remember PAMPs and the flood of recognized cellular debris now saturating the system

It's like having a massive microbial load until those PAMPs are cleared

Butler T. The Jarisch-Herxheimer Reaction After Antibiotic Treatment of Spirochetal Infections: A Review of Recent Cases and Our Understanding of Pathogenesis. Am J Trop Med Hyg. 2017;96(1):46-52. doi:10.4269/ajtmh.16-0434

# IT'S NOT JUST BACTERIA...



Candidalysin  
Ethanol  
Acetaldehyde



# NOT ALL SYMPTOMS ARE DIE OFF

Some things are just physiologic adjustments,  
especially in the gut ecosystem.

It can be a combination of a lot of rapid die off AND physiologic readjustment

Feeling fatigued and mildly or even moderately crummy isn't a reason in  
and of itself to slow treatment. Staying the course is often actually the way  
to make it through.

# SYMPTOMS OF CANDIDA DIE OFF

the BIG Herx Reactions are typically seen with large microbe levels and a very potent antimicrobial such as a pharmaceuticals.

More Die Off = Stronger Immune Response

- Generally feeling ill
- Nausea
- Headache
- Brain fog
- Worsening in any inflammatory symptom (ex. joint pain)
- Fever and chills are of course possible, but we want to avoid the intensity of these reactions as much as possible

**Unless someone is really sick from treatment, it's best to coach them through it and stay the course.**

# **PREVENTION OF CANDIDA DIE OFF REACTION**

- **Decrease Candida Numbers Without Antimicrobials**
- **Build Antioxidant Capacity**
- **Strengthen Immune Balancing Mechanisms**
- **Ensure Adequate Detoxification Pathways**
- **Start Protocol Gently**

# CANDIDA NUMBERS WITHOUT ANTIFUNGALS

Focus on Diet

Consider getting the diet dialed in first, ideally the MEVY diet. Perhaps a week on the MEVY.

# CANDIDA NUMBERS WITHOUT ANTIFUNGALS

Increase Probiotics and Digestive Enzyme  
with or without CanXida Remove (Formula RMV)



## Supplement Facts

Serving Size: 2 Capsules  
Servings Per Container: 30

Amount Per Serving	%DV
CanXida Premium Digestive Enzyme Blend	613 mg †
<i>Amylase, Cellulase, Glucoamylase, Hemicellulase, Invertase, Protease, Serratiopeptidase.</i>	
CanXida Probiotic Blend	650 mg †
<i>L. acidophilus, L. casei, L. plantarum, L. rhamnosus, B. longum, B. bifidum.</i>	

† Daily Value (DV) not established.

Other Ingredients:  
Vegetable Capsule and Magnesium Stearate.

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# CANXIDA RESTORE ENZYMES

## CanXida Restore Enzymes:

- Optimal nutrient breakdown
- Fungistatic
- Anti-inflammatory
- Possible biofilm break down

Erdogan, A., & Rao, S. S. C. (2015). Small Intestinal Fungal Overgrowth. *Current Gastroenterology Reports*, 17(4). doi:10.1007/s11894-015-0436-2

Pancreatic enzymes have fungistatic activity [38], and it is believed that gastric acidity kills microbes and would not allow the growth of bacteria and fungus. This explains the strong association between SIFO and use of proton pump inhibitors [10••]

> *Gastroenterology*. 1985 Apr;88(4):927-32. doi: 10.1016/s0016-5085(85)80009-3.

## Antibacterial activity of the pancreatic fluid

E Rubinstein, Z Mark, J Haspel, G Ben-Ari, Z Dreznik, D Mirelman, A Tadmor

PMID: 3882511 DOI: 10.1016/s0016-5085(85)80009-3



[Polymers \(Base\)](#). 2020 Dec; 12(12): 3032.

Published online 2020 Dec 17. doi: [10.3390/polym12123032](https://doi.org/10.3390/polym12123032)

PMCID: PMC7766206

PMID: [33348879](https://pubmed.ncbi.nlm.nih.gov/33348879/)

Efficient Biofilms Eradication by Enzymatic-Cocktail of Pancreatic Protease Type-I and Bacterial  $\alpha$ -Amylase

[Seung-Cheol Jee](#),<sup>1</sup> [Min Kim](#),<sup>1</sup> [Jung-Suk Sung](#),<sup>1</sup> and [Avinash A. Kadam](#)<sup>2,\*</sup>

# CANXIDA RESTORE PROBIOTICS

## CanXida Probiotics Strains:

- Demonstrated in research to inhibit **Candida proliferation**
- Repopulate gut with most common organisms

JOURNAL ARTICLE EDITOR'S CHOICE

## Human gut bifidobacteria inhibit the growth of the opportunistic fungal pathogen *Candida albicans*

Liviana Ricci, Joanna Mackie, Gillian E Donachie, Ambre Chapuis, Kristýna Mezerová, Megan D Lenardon, Alistair J P Brown, Sylvia H Duncan, Alan W Walker

FEMS Microbiology Ecology, Volume 98, Issue 10, October 2022, fiac095,

<https://doi.org/10.1093/femsec/fiac095>

Published: 25 August 2022 Article history

Microb Cell, 2020 Jan 6; 7(1): 1–14.

Published online 2019 Nov 25. doi: [10.15698/mic2020.01.702](https://doi.org/10.15698/mic2020.01.702)

PMCID: PMC6946018

PMID: [31921929](https://pubmed.ncbi.nlm.nih.gov/31921929/)

## The role of *Lactobacillus* species in the control of *Candida* via biotrophic interactions

Isabella Zangl,<sup>1</sup> Ildiko-Julia Pap,<sup>2</sup> Christoph Aspöck,<sup>2</sup> and Christoph Schüller<sup>1,3,\*</sup>

Author information Article notes Copyright and License information PMC Disclaimer

## REVIEW article

Front. Oral. Health, 16 July 2021

Sec. Oral Infections and Microbes

Volume 2 - 2021 |

<https://doi.org/10.3389/froh.2021.689382>

This article is part of the Research Topic

The Oral Microbiome: Dysbiosis, Diagnostics and Oral Health

[View all 4 Articles >](#)

## Anticandidal Activities by *Lactobacillus* Species: An Update on Mechanisms of Action

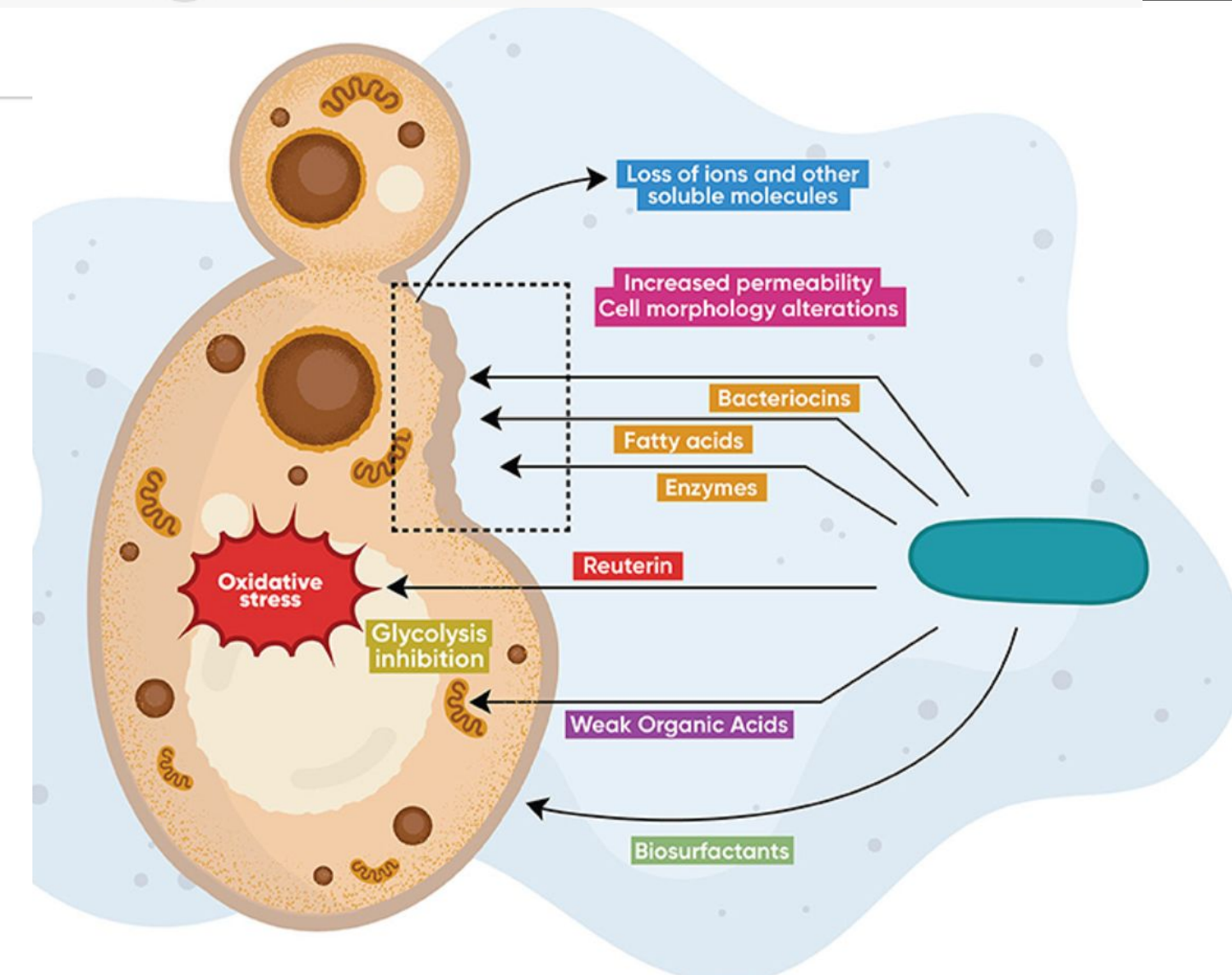


Roberto Vazquez-Munoz\*



Anna Dongari-Bagtzoglou\*

<i>Lactobacillus</i> species	Anticandidal metabolites
<i>L. plantarum</i>	Bacteriocins.
<i>L. acidophilus</i> <i>L. plantarum</i>	Weak organic acids: acetic, lactic, benzoic, and sorbic
<i>L. plantarum</i>	Fatty acids (FA) Short and long chain 3-Hydroxy Fatty Acids
<i>L. reuteri</i>	Reuterin
<i>L. fermentum</i> <i>L. casei</i>	Biosurfactants



# CANDIDA NUMBERS WITHOUT ANTIFUNGALS

## CanXida Restore (Formula RST) Dosing



### Supplement Facts

Serving Size: 2 Capsules  
Servings Per Container: 30

Amount Per Serving	%DV
CanXida Premium Digestive Enzyme Blend	613 mg †
<i>Amylase, Cellulase, Glucoamylase, Hemicellulase, Invertase, Protease, Serratiopeptidase.</i>	
CanXida Probiotic Blend	650 mg †
<i>L. acidophilus, L. casei, L. plantarum, L. rhamnosus, B. longum, B. bifidum.</i>	

† Daily Value (DV) not established.

**Other Ingredients:**  
Vegetable Capsule and Magnesium Stearate.

**Dose:** 1 capsule 2x/day; One with breakfast and *the other on an empty stomach before bed*

**Goal:** 2 capsules a day for 3-6 months minimum; dose can be increased up to 6 capsules daily as desired or is beneficial.



# Prevent Candida Die Off

## Build antioxidant capacity

Diet and CanXida Rebuild (Formula RBD)



### Supplement Facts

Serving Size: 2 Tablets  
Servings Per Container: 30

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin A (as Palmitate & Beta-Carotene)	3000 mcg RAE 333%	Zinc (as Zinc Aspartate)	10 mg 110%
Vitamin C (as Ascorbic Acid)	500 mg 556%	Selenium (as Selenomethionine)	100 mcg 181%
Vitamin D (as Cholecalciferol)	1.25 mcg 6%	Copper (as Copper Amino Acid Chelate)	1 mg 111%
Vitamin E (as d-Alpha Tocopheryl Succinate)	67 mg 447%	Manganese (as Manganese Aspartate)	7.5 mg 326%
Thiamin (as Thiamin HCl)	25 mg 2083%	Chromium (as Chromium Picolinate)	100 mcg 285%
Riboflavin	20 mg 1539%	Molybdenum (as Molybdenum Glycinate Chelate)	25 mcg 56%
Niacin (as Niacin & Niacinamide)	70 mg NE 438%	Potassium (Potassium Aspartate)	37.5 mg <1%
Vitamin B6 (as Pyridoxine HCl/Pyridoxal 5'-Phosphate Complex)	20 mg 1176%	<b>CanXida Proprietary Blend:</b>	400 mg †
Folate (as Folic Acid)	416 mcg DFE (250 mcg Folic Acid) 104%	Gum Mastic, Goldenseal Root, Slippery Elm Bark, GingerRoot, Cinnamon Bark, Thyme (Leaf & Flower), Rosemary(Leaf & Flower), Chamomile (Flower/German), Anise Seed, Betaine HCl, Glutamic Acid HCl	
Vitamin B12 (as Cyanocobalamin)	50 mcg 2083%	Citrus Bioflavonoid	50 mg †
Biotin	150 mcg 500%	PABA	25 mg †
Pantothenic Acid (as d-Calcium Pantothenate)	150 mg 300%	Inositol	12.5 mg †
Choline (from Choline Citrate/Bitartrate)	10 mg 2%	Boron (as Boron Citrate)	1 mg †
Calcium (from Calcium Citrate/Ascorbate)	150 mg 12%	Trace Elements (from Sea Vegetation)	100 mcg †
Iron (as Ferronyl)	0.75 mg 4%	Vanadium	12 mcg †
Magnesium (as Magnesium Aspartate/Ascorbic)	150 mg 36%		

† Daily Value (DV) not established.

Other Ingredients: Croscarmellose Sodium, Microcrystalline Cellulose, Magnesium Stearate, Silicon Dioxide and Stearic Acid

**Directions:** Take 2 tablets with food or as directed by your health care professional.

**Dose:** 1 capsule 2x/day; One with breakfast and with dinner; Or 2 capsules once daily with food.

**Goal:** 2 capsules a day for at least 3 months.



# Managing Die Off When It Happens

Decrease CanXida Remove to prior dose or stop

Consider increasing CanXida Restore dose

Improve detoxification pathways...

Next slide

# Managing Die Off When It Happens

## Enhance Detoxification

Liver support:

- Brassica
- Allium
- Dandelion root
- Increase glutathione levels - N-Acetyl Cysteine ~1g 3x/day
- Alternatively, can consider using glutathione

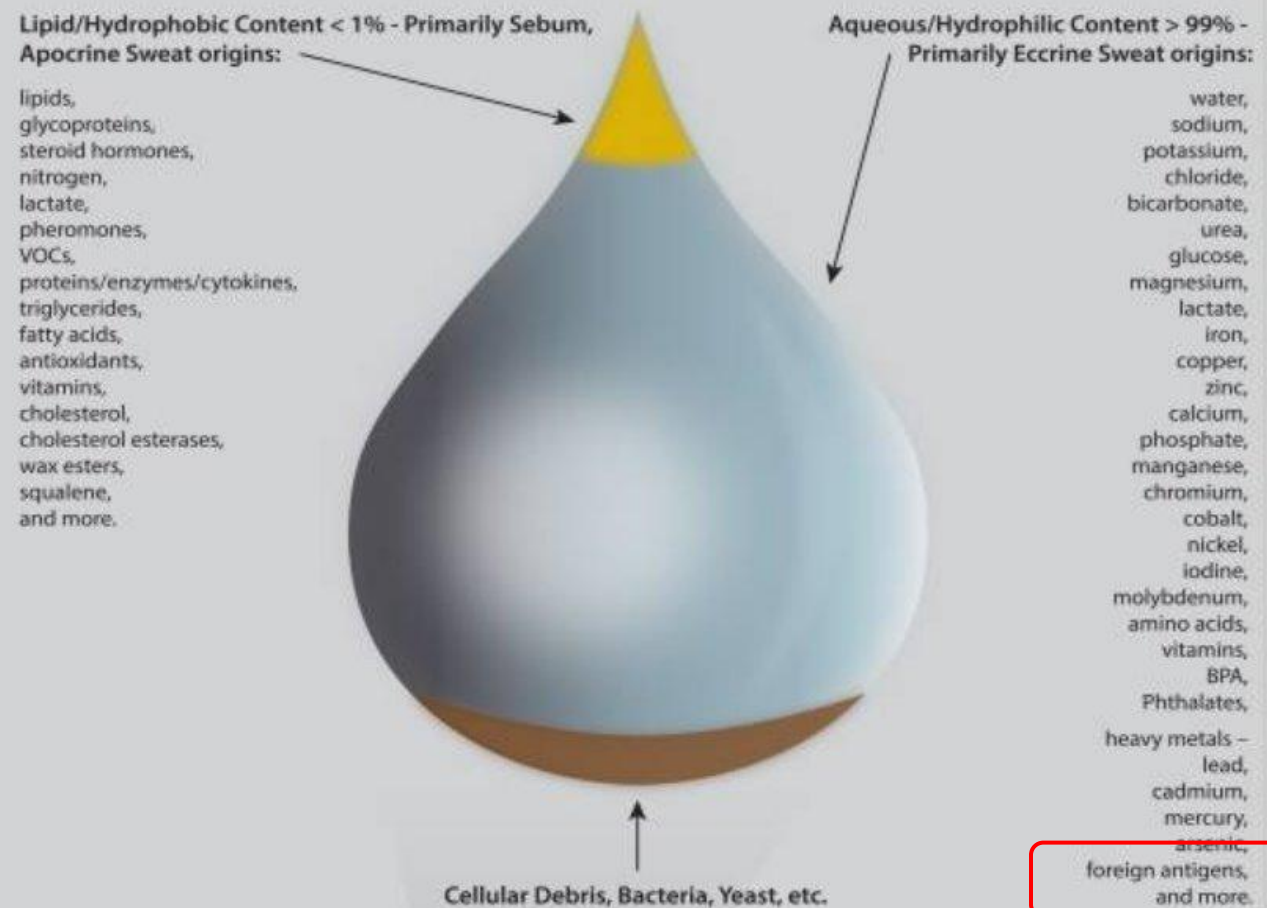
Sweat

Get fiber to at least 30g a day

Adequate protein; 1-1.2g/kg body weight

CanXida Rebuild provides all the other cofactors necessary

# DON'T UNDERESTIMATE SWEATING!

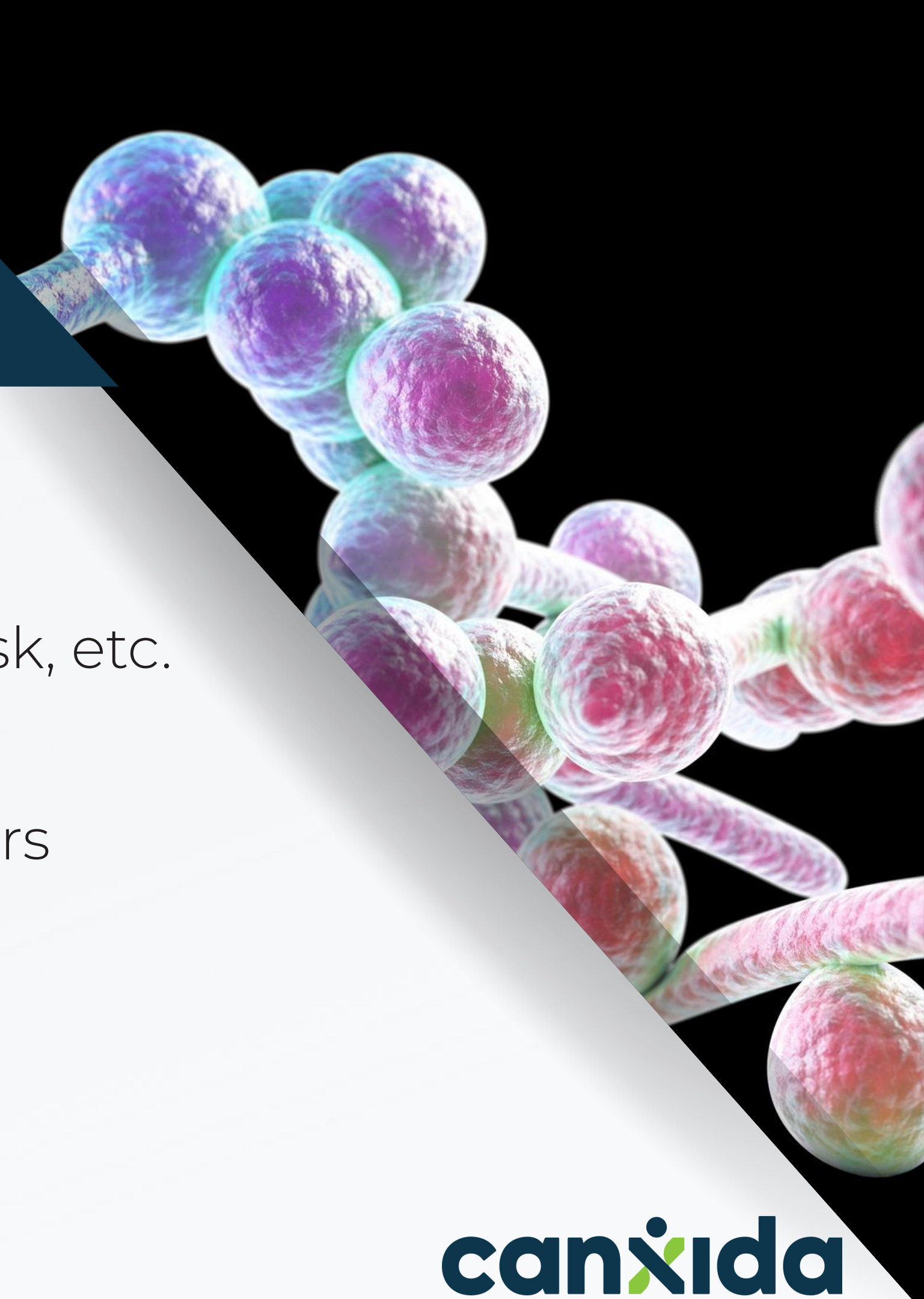


Hussain, J. N., Mantri, N., & Cohen, M. M. (2017). Working Up a Good Sweat - The Challenges of Standardising Sweat Collection for Metabolomics Analysis. *The Clinical biochemist. Reviews*, 38(1), 13–34.

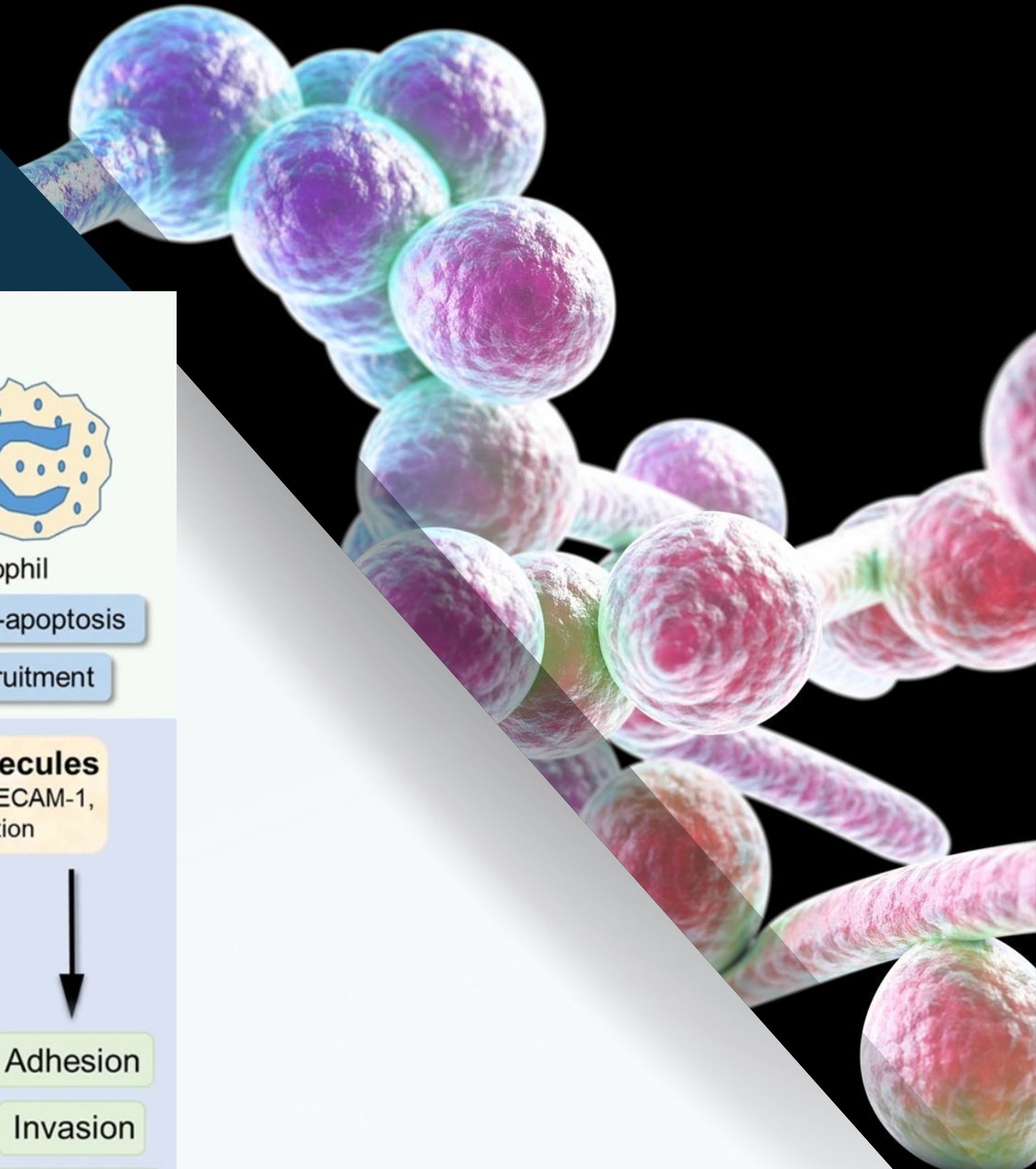
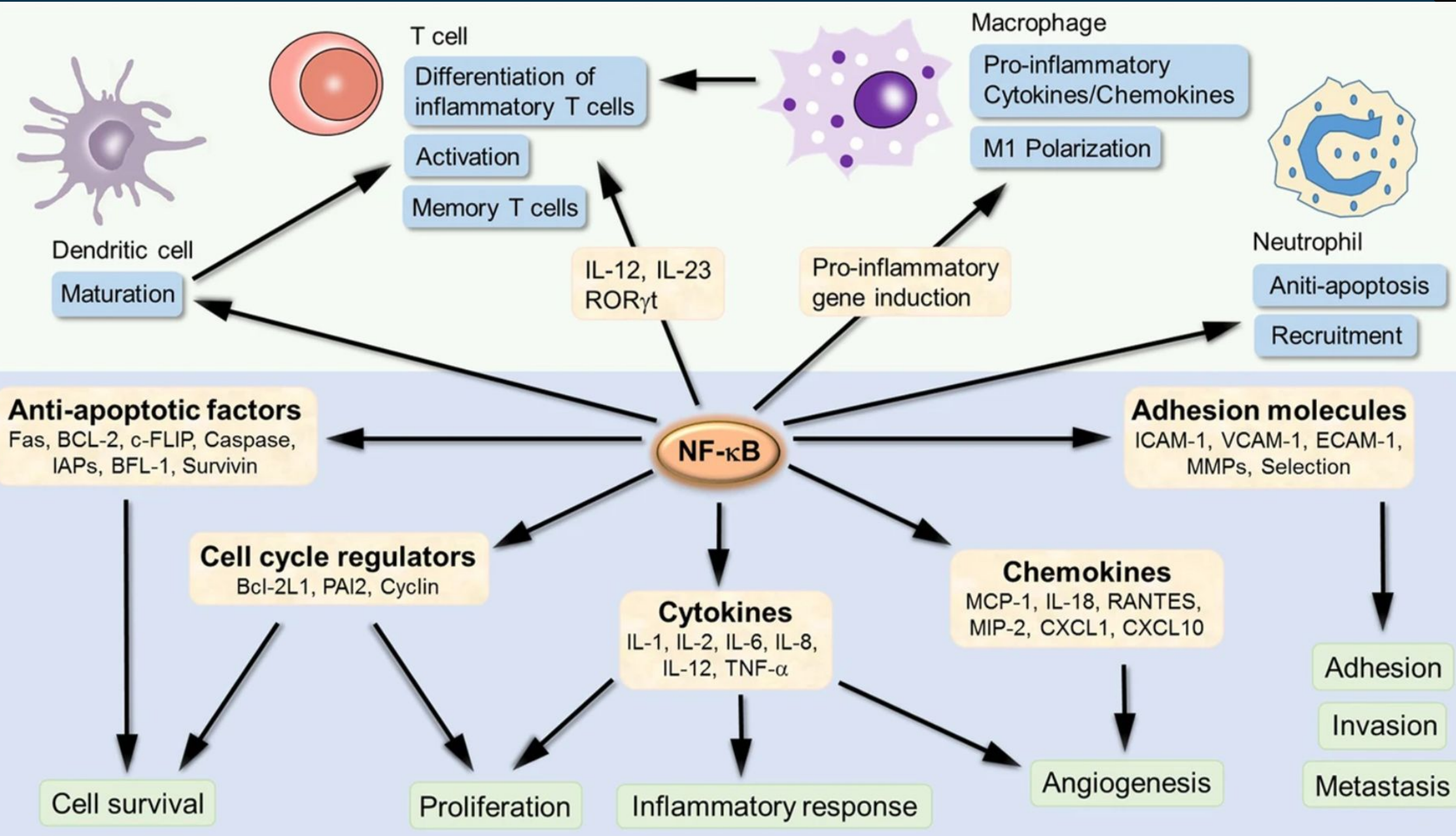
## **BINDERS MAY HELP**

Activated Charcoal, Bentonite Clay, Psyllium Husk, etc.

Take away from supplements and food by 2 hours



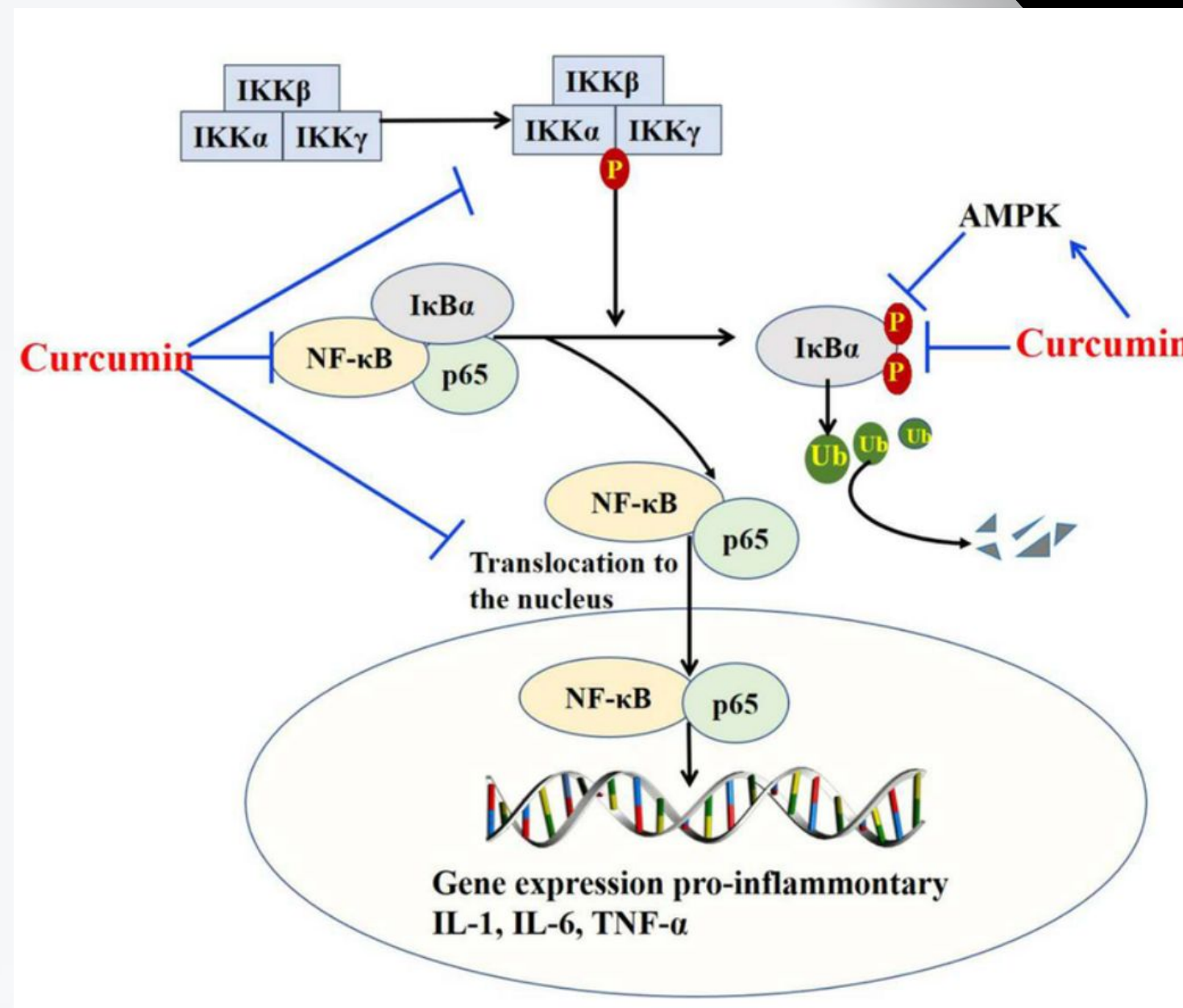
# REGULATE NFκB



# REGULATE NFκB

## Polyphenols

- Curcumin
- Green Tea
- Berries and Nuts
- Resveratrol
- Quercetin
- Dark Leafy Greens

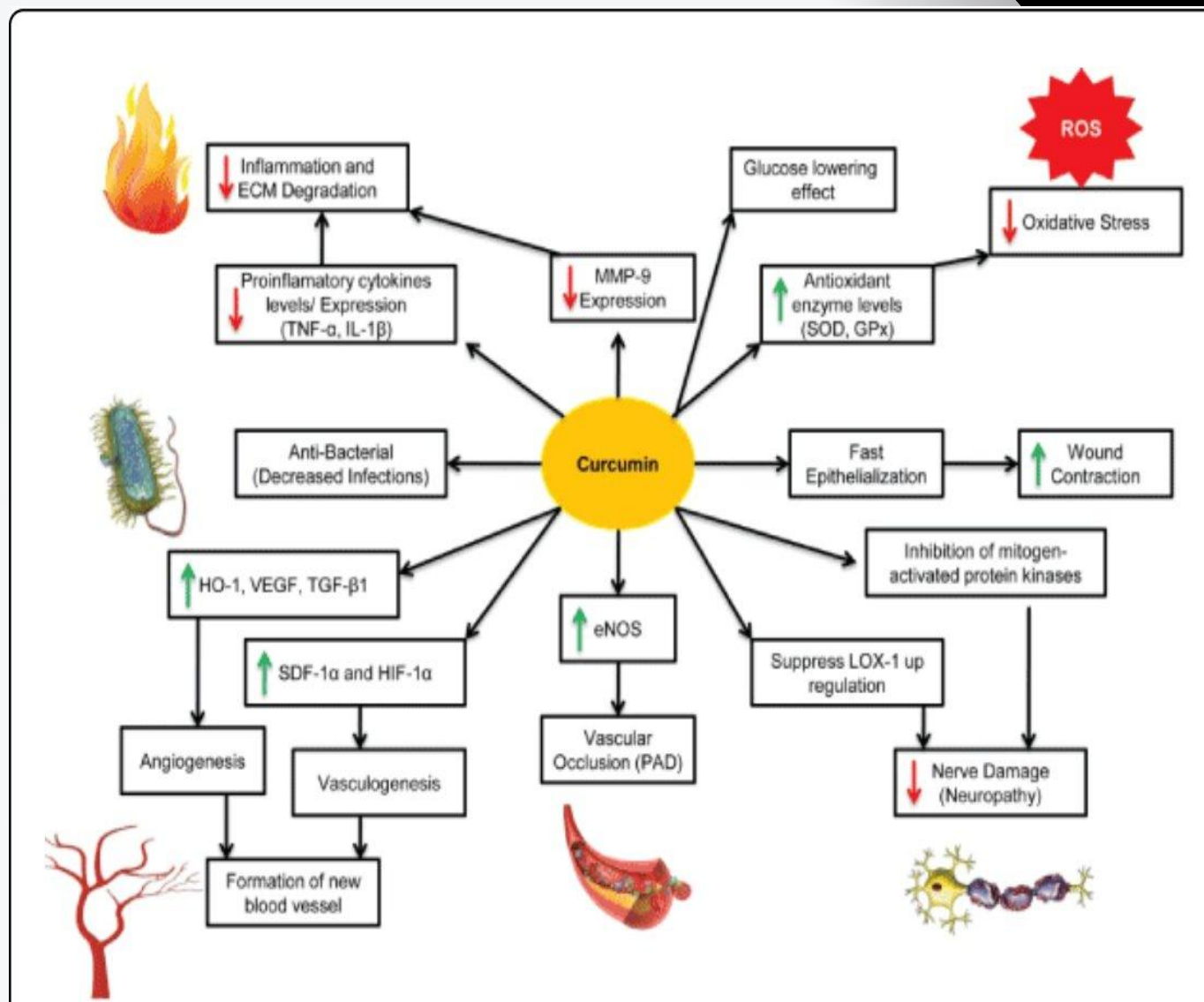
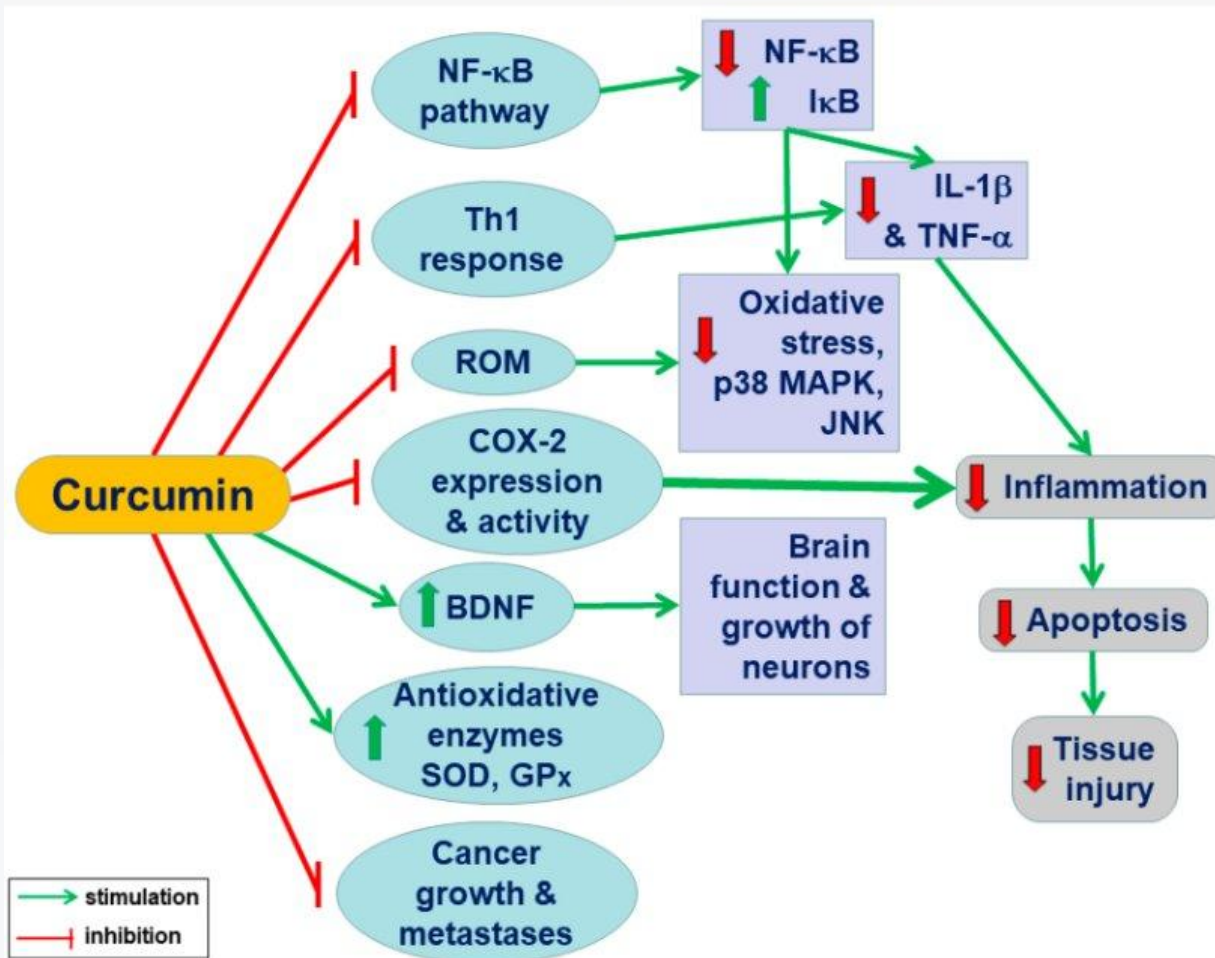


Liu Z, Ying Y. The Inhibitory Effect of Curcumin on Virus-Induced Cytokine Storm and Its Potential Use in the Associated Severe Pneumonia. *Front Cell Dev Biol.* 2020;8:479. Published 2020 Jun 12. doi:10.3389/fcell.2020.00479

Khan H, Ullah H, Castilho PCMF, et al. Targeting NF-κB signaling pathway in cancer by dietary polyphenols. *Crit Rev Food Sci Nutr.* 2020;60(16):2790-2800. doi:10.1080/10408398.2019.1661827

# IN CASE YOU NEED MORE REASONS FOR CURCUMIN...

**Figure 1.** A conclusive summary of the pleiotropic action of curcumin in the body system: Curcumin exhibits anti-inflammatory, antioxidant, antiapoptotic, antitumor, and antimetastatic activities and suppresses multiple signalling pathways responsible for inflammation, apoptosis, and cellular death. Curcumin improves the growth of neurons and the functions of the brain in addition to the downregulation of reactive oxygen species, oxidative stress, and proinflammatory factors (NF-κB and cytokines).



**Figure 3:** Curcumin mechanism of actions in treating DFUs

Kwiecien S, Magierowski M, Majka J, Ptak-Belowska A, Wojcik D, Sliwowski Z, Magierowska K, Brzozowski T. Curcumin: A Potent Protectant against Esophageal and Gastric Disorders. *International Journal of Molecular Sciences*. 2019; 20(6):1477. <https://doi.org/10.3390/ijms20061477>

Karri, Veera Venkata Satyanarayana Reddy & Kuppasamy, Gowthamarajan & Kumar, MN & Malayandi, Rajkumar. (2015). Multiple Biological Actions of Curcumin in the Management of Diabetic Foot Ulcer Complications: A Systematic Review. *Trop Med Surg*. 3. 2.



# **INCREASE AS PREVENTION MEASURES ARE IN PLACE**

Slow and steady increases in CanXida Remove  
once these strategies are in place

# CANXIDA REMOVE DOSING CONSIDERATIONS

- **Go slow!**
- **Gentle is nearly always better**
- **Consider the prior recommendations before starting Remove**



## Supplement Facts

Serving Size: 1 Tablet  
Servings Per Container: 60

Amount Per Serving		%DV
Biotin	2,000 mcg	6,667%
canXida Proprietary Blend utilizing Standardized Extracts:	1148 mg	†
<i>Garlic, Caprylic Acid, Grapefruit Seed, Pau d'arco, Undecylenic Acid, Black Walnut, Neem, Betaine HCl, Berberine HCl, Clove, Oregano Oil</i>		

† Daily Value (DV) not established.

**Other Ingredients:** Dicalcium Phosphate, Magnesium Stearate, Hydroxypropyl Methylcellulose.

CanXida Formula RMV contains nuts (walnut hull extract)

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**Dose:** 1 tablet for 3-4 days with food

**Good Response:** Increase to 1 tablet twice a day for 7 days

**Poor Response/Aggravation:** Decrease to ½ tablet a day for 3-4 days followed by ½ tablet a day increase every week.

**Goal:** 1-2 tablets 3x/day; Aim for 6 weeks at therapeutic dose with 1-2 week break and then increase once again for 6 weeks.

# Summary

## Consider:

- Getting MEVY diet in place first
- Start with CanXida Restore before Remove
- Build antioxidant capacity (Diet and CanXida Rebuild)
- NFKappaB (Inflammation) modulation
- Opening emunctories/Stimulate detox pathways

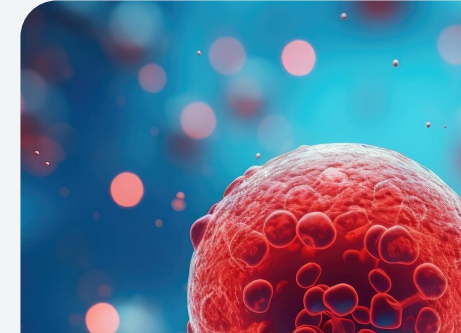
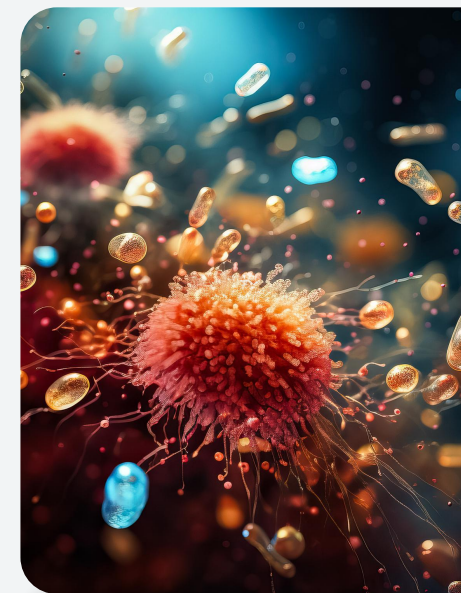
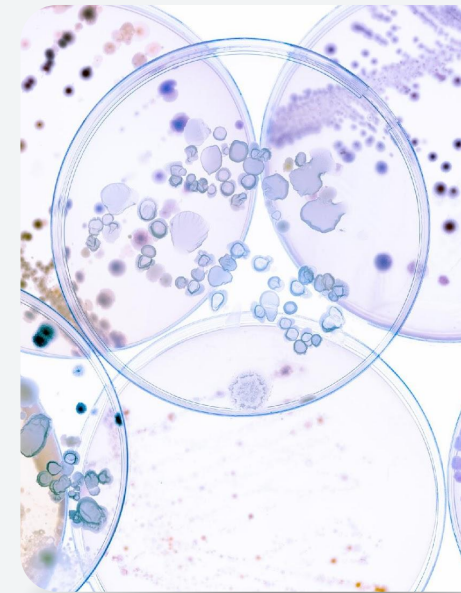
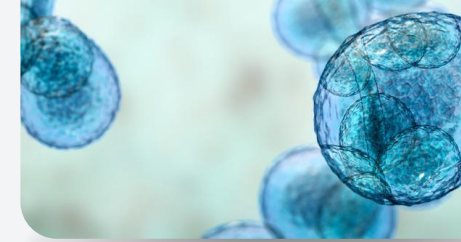
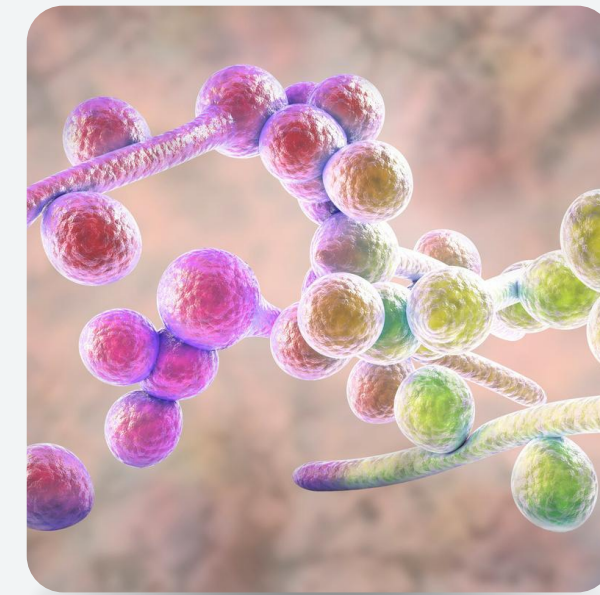
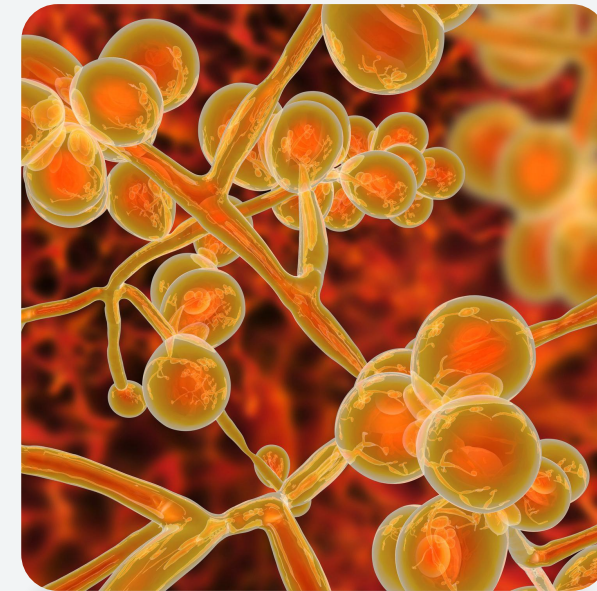
## CanXida Remove (Formula RMV)

- Start low and increase slow to moderately
- Stop or decrease if symptoms are difficult

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[WWW.CANXIDA.COM/CONTACT](http://WWW.CANXIDA.COM/CONTACT)  
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See our protocol and MANY other resources @  
<https://blog.canxida.com/navigating-candida-candidas-ultimate-resource-page/>