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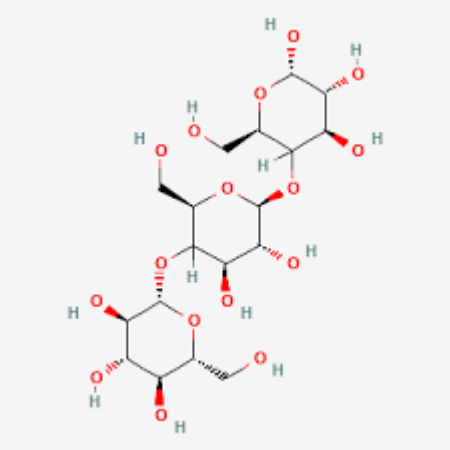
Mushroom health benefits.

Mushrooms contain a number of essential nutrients that are important for good health. For example, they are a good source of dietary fiber, protein, Antioxidants like vitamin C and Beta Glucans.



Beta glucans are a type of polysaccharide carbohydrate that is found in the cell walls of many mushrooms. Beta glucans have been shown to have a number of health benefits, including immune-boosting effects and potential anti-cancer properties.One way that beta glucans may boost the immune system is by activating white blood cells called macrophages, which help to fight off infection and disease. Beta glucans may also stimulate the production of other immune cells, such as natural killer cells and T cells, which can help to protect against illness.

Some studies have suggested that beta glucans may help to slow the growth of cancer cells and improve the effectiveness of chemotherapy drugs. It is important to note that immune modulation by each mushroom might work in complex ways and at least with the Miatake mushroom a clinical trial showed increase in some components of the immune response but decrease in others.
Research also shows the potential use adjunct to conventional cancer treatment for enhancing tumor response and stimulating host immunity. It's important to note much of this research has been done with cultures cells and not on patient population.

Mushrooms also have many other polysaccharide which affect our gut biome as they feed on those polysaccharides that we can't digest. In recent years, there has been growing evidence of the important role of gut microbiota in the mediation/action of the various health benefits of mushrooms specifically in glucose regulation, gut/bowel health and obesity prevention.
There is an established body of evidence around many mushrooms having liver protective properties by affecting gene expression and causing more efficient fat transportation in the liver. This too might be potentially mediated by gut bacteria however more research is needed.

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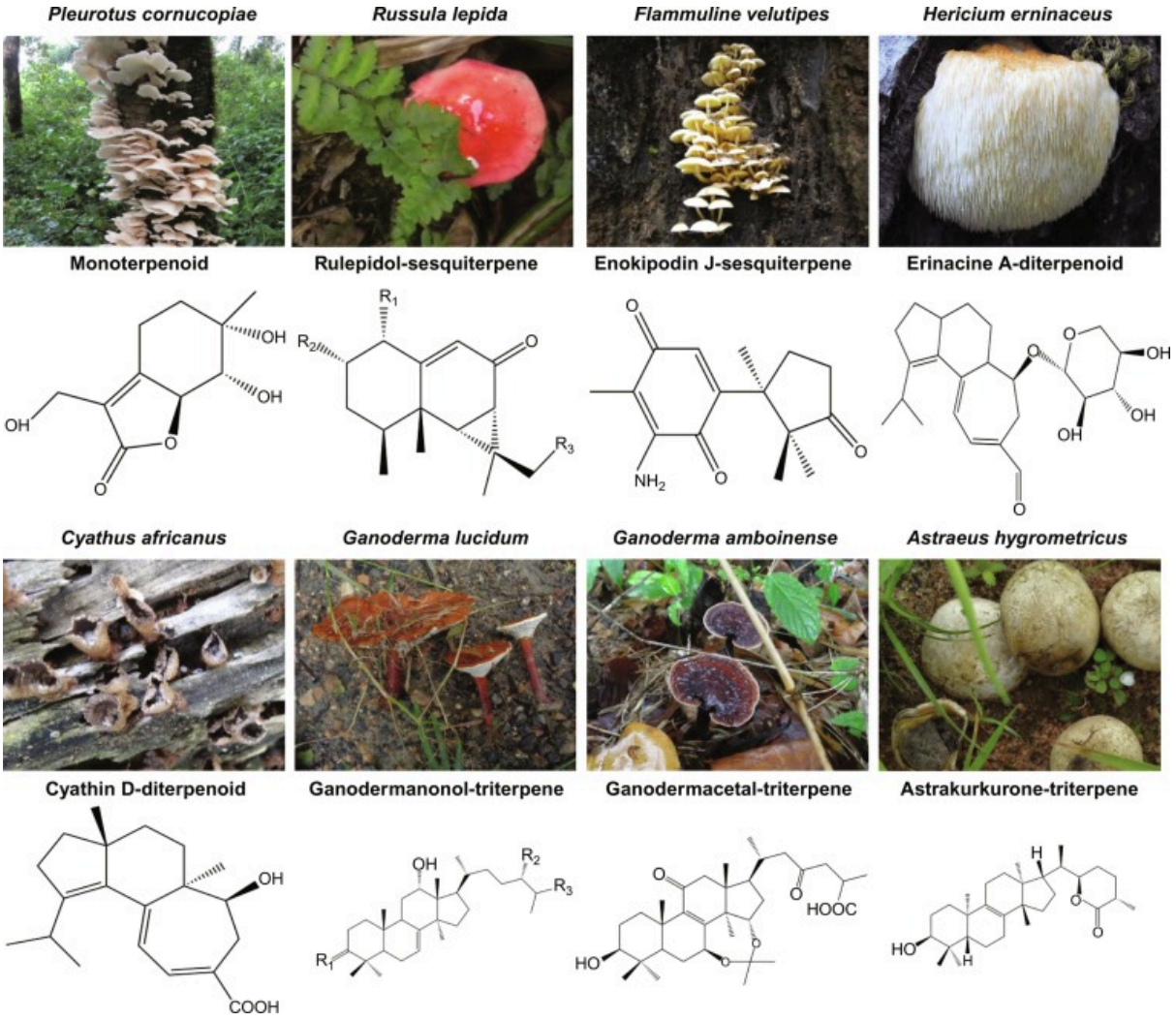
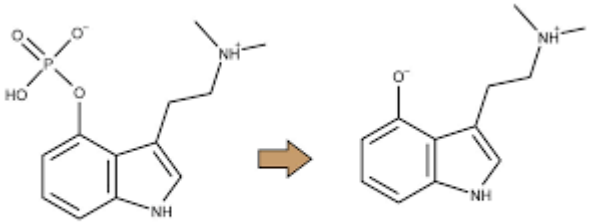
Other bio-active compounds in mushroom include Terpenes and Terpenoids, which are among the most widely spread metabolites in mushrooms with interesting biological activities that include anti-inflammatory, antimicrobial and antiviral effects against many disease bearing viruses and germs and might help with inflammatory conditions such as asthma and arthritis.



Most of the research has been done with animals or cultured cells including research showing molecules in mushrooms can help improve gut, brain, bone and kidney health and even increase testosterone levels and fight Malaria and Tuberculosis,

While Human research is limited there have been some double blind placebo controlled trials, for instance showing that Lion's mane improved mild cognitive impairment in ages 50+ and a clinical trial with Reishi showing improved liver functioning for chronic hepatitis patients.

Recent research has increasingly focused on the potential benefits of psilocybin containing mushroom, the psychoactive compound found in so-called "magic mushrooms." Psilocybin has shown promise in a variety of therapeutic contexts, particularly in the treatment of mental health disorders such as depression, anxiety, and PTSD. The mechanism of action for psilocybin is largely centered around its interaction with the 5-HT2A receptor, a subtype of serotonin receptor. Psilocybin breaks down into psilocin in the gut which then binds to these receptors leading to a hyperactivation of neurons.



This hyperactivation is crucial for understanding the therapeutic effects of psilocybin. It effectively disrupts the brain's normal top-down processing biases. Typically, our brain operates based on a set of pre-existing biases and frameworks, which are used to interpret new information. These top-down biases often keep the brain in a sort of 'predictive' mode, relying on past experiences and established models to understand the present.

However, when psilocin hyperactivates neurons through the 5-HT2A receptor, it temporarily dissolves these top-down biases. This shift allows the brain to become more receptive to bottom-up information – that is, information coming directly from sensory inputs, rather than being filtered through existing cognitive frameworks. This increased receptivity can lead to a more fluid and flexible brain state, where the individual is more open to new experiences and perspectives. This can result in the brain updating its model of reality, potentially leading to therapeutic outcomes like a reduction in symptoms of depression or anxiety. This is because

the individual may be able to process and integrate experiences and emotions in a way that was not possible under their usual top-down cognitive processing.

Following is the table of 26 of the mushrooms that have been reviewed. Research with humans is mentioned in the table, other research in animals and cells are not specifically mentioned. A detailed list of research papers can be found in the appendix.
For easy viewing utilize link

Table of mushroom health benefits

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Appendix

Bone health

1. https://pubmed.ncbi.nlm.nih.gov/27649725/
2. https://www.mdpi.com/1422-0067/21/18/6971

Gut / Bowel health (healthy microbiome)

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4202469/
2. https://pubmed.ncbi.nlm.nih.gov/22187166/
3. https://www.tandfonline.com/doi/abs/10.1080/10408398.2021.1903385
4. https://www.sciencedirect.com/science/article/abs/pii/S2212429222005764
5. https://www.sciencedirect.com/science/article/abs/pii/S0278691519300948?via%3Dihub
6. https://www.mdpi.com/2072-6643/13/3/1008
7. https://onlinelibrary.wiley.com/doi/full/10.1002/jsfa.9582

AntiViral

1. https://www.cabdirect.org/cabdirect/abstract/20013136383\
2. https://www.mdpi.com/1999-4915/13/2/350
3. https://www.mdpi.com/2223-7747/11/19/2631
4. https://msptm.org/files/Vol38No3/tb-38-3-063-Ang-W-X.pdf
5. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,0d0f121956dd501b,68ee03ef1a9aac59.html

Liver

1. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,72e968661ff5d957,09001a9418679e96.html
2. https://www.sciencedirect.com/science/article/pii/S1756464621001456#b0165
3. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,684673684ea939cb,04dc9159679bcee5.html?utm_source=TrendMD&utm_medium=cpc&utm_campaign=International_Journal_of_Medicinal_Mushrooms_TrendMD_0
4. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0026654

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5. https://www.scirp.org/html/2-2500560_51220.htm
6. https://onlinelibrary.wiley.com/doi/full/10.1111/jcmm.17283
7. https://www.tandfonline.com/doi/abs/10.1080/07315724.2020.1779850
8. https://www.sciencedirect.com/science/article/pii/S2213453021000598
9. https://www.sciencedirect.com/science/article/pii/S1756464621001456

Respiratory Health

1. https://www.nature.com/articles/s41598-021-91256-6.pdf
2. https://www.mdpi.com/2223-7747/10/8/1736
3. https://www.sciencedirect.com/science/article/pii/S0717345822000215
4. http://eeb.lu.lv/EEB/201510/EEB_13_Dandapat.pdf

TB and Malaria

1. https://www.sciencedirect.com/science/article/pii/S2213453022002361
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3851412/

Immune boosting /modulating (Anti Cancer properties)

1. https://pubmed.ncbi.nlm.nih.gov/26996021/
2. https://pubmed.ncbi.nlm.nih.gov/30108453/
3. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007731.pub2/abstract
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6889544/
5. https://journals.sagepub.com/doi/full/10.1258/ebm.2010.010113
6. https://pubmed.ncbi.nlm.nih.gov/25351719/
7. https://pubmed.ncbi.nlm.nih.gov/12499658/
8. https://academic.oup.com/jn/article/137/6/1472/4664807
9. https://www.sciencedirect.com/science/article/pii/S2225411015001169
10. https://pubmed.ncbi.nlm.nih.gov/31679229/
11. https://pdfs.semanticscholar.org/9e51/dbd201753c25c90486fcbe4a72e01cfb32d1.pdf
12. https://iubmb.onlinelibrary.wiley.com/doi/full/10.1002/iub.2047
13. https://www.mdpi.com/1648-9144/55/10/640
14. http://www.pharmahealthsciences.net/pdfs/volume9-issue12021/Mini-review-vol9-issue1-2021-MS-15841.pdf
15. https://www.jstage.jst.go.jp/article/cancersci1985/76/2/76_2_142/_article/-char/ja/

16. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,23d62e9b62d52918,5e7efbfd2e825d75.html
17. https://pubmed.ncbi.nlm.nih.gov/28094746/
18. https://iubmb.onlinelibrary.wiley.com/doi/abs/10.1002/bab.2013
19. https://pubs.acs.org/doi/abs/10.1021/jf400916c
20. https://pubmed.ncbi.nlm.nih.gov/25866155/
21. https://ir.uitm.edu.my/id/eprint/17899/
22. https://www.hindawi.com/journals/ecam/2012/697603/
23. https://link.springer.com/article/10.1007/s11130-015-0492-7
24. https://www.sciencedirect.com/science/article/abs/pii/S0261561405001913
25. https://www.sciencedirect.com/science/article/abs/pii/S0304383505010554
26. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,35ee20ab487c6e00,4be443dc3d1ca1cc.html
27. https://www.sciencedirect.com/science/article/abs/pii/S0944711310000358
28. https://link.springer.com/article/10.1007/s00432-009-0562-z

Nerve/ Brain Health

1. https://link.springer.com/article/10.1023/A:1023963509393
2. https://www.sciencedirect.com/science/article/pii/S0014579300023176
3. https://www.sciencedirect.com/science/article/abs/pii/S0014299999000771
4. https://www.sciencedirect.com/science/article/abs/pii/S0040403900767608
5. https://onlinelibrary.wiley.com/doi/abs/10.1002/ptr.2634
6. https://www.sciencedirect.com/science/article/pii/S240558082100279X
7. https://www.mdpi.com/1422-0067/22/19/10413
8. https://www.sciencedirect.com/science/article/abs/pii/S0367326X19301856
9. https://pubmed.ncbi.nlm.nih.gov/18803231/
10. https://link.springer.com/article/10.1186/1472-6882-13-157/
11. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10084772/pdf/nihms-1881583.pdf

Glucose levels

1. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,489762826cea4201,39339ece262c3632.html
2. https://link.springer.com/article/10.1007/s11130-016-0552-7
3. https://www.sciencedirect.com/science/article/abs/pii/S1756464618301476
4. https://www.sciencedirect.com/science/article/abs/pii/S027153170900253X
5. https://www.banglajol.info/index.php/BJMB/article/view/13280
6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9271422/
7. https://d1wqtxts1xzle7.cloudfront.net/54933887/Hypoglycemic_activity_of_ethanolic_extra20171106-2234-1g2s9fn-libre.pdf
8. https://www.sciencedirect.com/science/article/abs/pii/S0944711321003925
9. https://www.tandfonline.com/doi/full/10.1080/21501203.2019.1595204
10. https://pubmed.ncbi.nlm.nih.gov/16575562/
11. https://www.sciencedirect.com/science/article/abs/pii/S0278691519300948?via%3Dihub
12. https://www.tandfonline.com/doi/full/10.1080/13880209.2021.1969413
13. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,7ea771a61223ff62,403e62c61f59e351.html
14. https://www.sciencedirect.com/science/article/pii/S2221169117310390
15. https://pubmed.ncbi.nlm.nih.gov/21031614/
16. https://www.banglajol.info/index.php/BJMB/article/view/13280
17. https://www.hindawi.com/journals/ecam/2012/856381/

Cholesterol/hypertension/triglycerides

1. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,433ce6e41ae07a4d,557a5ecb112c40e3.html
2. https://www.sciencedirect.com/science/article/abs/pii/S027153170900253X
3. https://pubmed.ncbi.nlm.nih.gov/19001780/
4. https://www.hindawi.com/journals/ecam/2020/5865764/
5. https://pubmed.ncbi.nlm.nih.gov/21882527/
6. https://www.sciencedirect.com/science/article/pii/S1319562X11000477
7. https://www.sciencedirect.com/science/article/abs/pii/S1756464610000630

Anti Obesity

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1. https://www.mdpi.com/2072-6643/12/3/726
2. https://www.sciencedirect.com/science/article/abs/pii/S2212429221002327
3. https://www.mdpi.com/2072-6643/14/9/1868
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6278646/
5. https://pubmed.ncbi.nlm.nih.gov/26284561/

Anti Microbial

1. https://www.frontiersin.org/articles/10.3389/fphar.2019.01445/full
2. https://www.sciencedirect.com/science/article/abs/pii/S1340354005704903?via%3Dihub
3. https://pubmed.ncbi.nlm.nih.gov/20739167/
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3851412/
5. https://www.ligno.com.my/pdf/scientific-publications/26%20Screening%20of%20Lignosus%20rhinocerus%20Extracts%20as%20Antimicrobial%20Agents%20against%20Selected%20Human%20Pathogens%20(2012).pdf
6. https://link.springer.com/article/10.1007/s13369-022-07418-9
7. https://d1wqtxts1xzle7.cloudfront.net/58242855/ANTIOXIDANT_AND_ANTIMICROBIAL_ACTIVITIES_OF_OYSTER_MUSHROOM-libre.pdf
8. https://d1wqtxts1xzle7.cloudfront.net/35978143/01_IJPPR_russula_lepida-libre.pdf

Hormonal health

1. http://www.koreascience.or.kr/article/JAKO201124239513770.page
2. https://www.sciencedirect.com/science/article/abs/pii/S0141813021024788

Kidney

1. https://www.imrpress.com/journal/FBE/3/1/10.2741/E245
2. https://academic.oup.com/ndt/article/27/2/556/1926885
3. https://www.dl.begellhouse.com/journals/708ae68d64b17c52,6de384366c0c5922,62aceaf825be7ff6.html
4. https://www.frontiersin.org/articles/10.3389/fphar.2021.743931/full

Exercize

1. https://pubmed.ncbi.nlm.nih.gov/28094746/

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2. http://bdpsjournal.org/index.php/bjp/article/view/498
3. https://pubmed.ncbi.nlm.nih.gov/25251930/
4. https://pubmed.ncbi.nlm.nih.gov/26545669/

Mental health

1. https://www.mdpi.com/1422-0067/21/1/163
2. https://www.urncst.com/index.php/urncst/article/view/489
3. https://www.frontiersin.org/articles/10.3389/fpsyt.2023.1134454/full
4. https://www.ingentaconnect.com/content/ben/cn/2024/00000022/00000004/art00007